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The Art-of-Living in Children and Adolescents

Development and Evaluation of Interventions to Improve Well-Being

Vom Fachbereich Humanwissenschaften
der Technischen Universität Darmstadt

zur Erlangung des Grades
Doktor rerum naturalium
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Dissertation
von Jessica Lang

Erstgutachter: Prof. Dr. Bernhard Schmitz

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“EVERYTHING is FIGUREOUTABLE!“

- Marie Forleo -

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Abstract

The pursuit of a happy and good life is gaining importance increasingly. In today's world the orientation towards traditional values, such as religion or politics, has taken a back seat. In this context, art-of-living can provide assistance. It aims to instill a conscious way of living which leads to a fullfiling and happy life. In philosophy, the construct is defined as a mindful and self-determined way of dealing with one's self and way of life and it suggests a continuous critical reflection on one's own life. Consequently, it is important to recognize one's own abilities, strengths, and weaknesses and to be aware of the opportunities in life to obtain subjective well-being through mindful effort. Art-of-living can be assigned to positive psychology, which applies in this context, because it deals with the conditions and processes that enable self-development of the individual. The focus is on the systematic development of what is beneficial for well-being, such as human strengths, savoring, or optimism. It has been pointed out that this bundle acts to buffer stressful situations and can lead to a fulfilled life, which is also the aim of art-of-living.

Research has shown that positive psychology does not only deal with adults. It has pointed out that positive psychology is also important for children and adolescents and so the study of positive psychology is alive and well in children and youth.

Already young children have to deal with numerous life stressors. For this reason, the preventive use of positive action like dealing with one's self and dealing with life stressors is advocated by proponents of positive education. Hence, interventions of positive psychology have shown their effectiveness in numerous studies. Especially those who are developed for young children are promising. One context in which a lot of research on children and adolescents takes place is the scholastic context. There are numerous of intervention studies in the field of positive psychology dealing with different aspects, like well-being, resilience or mental health. In summary, to deal with children's positive psychology is of great interest for today's society.

Nevertheless, there is no research that deals with the art-of-living of children and adolescents as of yet. Neither are there many instruments to measure art-of-living of children and adolescents as well as constructs of positive psychology. A huge number of instruments already exists but mainly developed for adults. It is common that researchers in the field of psychology for children and adolescents use instruments for adults and modify them. A lot of adult instruments consist of a huge number of items and so they cannot easily be used for studies with young children. Therefore, for some studies only a selection of items is made. It is uncertain whether complex constructs can be described with only a selection of items. Furthermore, there is an even smaller number of measurements in German. This is a limitation for cross-cultural studies and for research in Germany where young students are not familiar with the English language.

In light of the described research gaps, the present doctoral thesis addresses the (1) development of interventions to improve art-of-living of children and adolescents, (2) training children and adolescents from different contexts, (3) the validation of child-adapted questionnaires, and (4) the translation of a common instrument in the field of positive psychology into German.

The purpose of Study 1 was to develop an intervention to improve art-of-living of children and adolescents in the scholastic context for students of different age groups - primary school students and students from higher grades. Study 1.1 dealt with the initial examination of whether it is possible to enhance the art-of-living by training selected art-of-living strategies. Therefore, training with three conditions was developed and conducted with secondary school students (ages 16–19). For Study 1.2, a second art-of-living training was developed and conducted with children from primary school (ages 8–11). In summary, the training successfully enhanced art-of-living. In Study 1.1, the art-of-living measures increased significantly for the training conditions compared to a control group. In addition, Study 1.2 showed that higher levels of the art-of-living lead to a better quality of life.

The aim of Study 2 was to transfer the art-of-living into the clinical-therapeutic context. Again, two studies were conducted. Study 2.1 aimed at identifying

those art-of-living components that show differences for adolescents who are suffering from anxiety or depression by using a pre-experimental comparative design. The results could show significant differences of the art-of-living subscales in the comparison to a clinical and a nonclinical sample. A specific pattern was identified for the clinical sample. In Study 2.2, need-oriented and predefined art-of-living interventions were developed, implemented and evaluated based on a randomized two factors multivariate 3x3 design with repeated measures. The main outcome measures are art-of-living, life satisfaction, depression and anxiety. The results show that the developed training improved the art-of-living as well as the satisfaction with life, and reduced depression.

Study 3 aimed at translating instruments for children and adolescents measuring constructs of positive psychology into German. Therefore, the Satisfaction with Life Scale - child version (SWLS-C), which is one of the most commonly used questionnaires in the field of positive psychology, was translated with the use of a backtranslation-proceeding (Study 3.1) and validated by a sample of 1099 students aged 8 to 17 (Study 3.2). The analyses included retesting of reliability, concurrent and discriminant validity by additionally measuring several established constructs of positive psychology. Model fit indices, internal consistencies, retest-reliability as well as concurrent and discriminant validity evidence were satisfying.

In conclusion, this doctoral thesis makes an important contribution to research on the topic of the art-of-living of children and adolescents, particularly in the improvement by training art-of-living strategies. Moreover, the results allow implications for intervention programs for different contexts, i.e. school and clinical-therapeutic context, as well as different age groups. Furthermore, instruments to measure the effects on life satisfaction for children and adolescents were developed and can be used for the systematic evaluation of interventions in future studies for German speaking countries. As a consequence, SWLS-C data of children and adolescents of different nationalities can be compared and in addition as cross-cultural measurement invariance studies can be conducted.

Zusammenfassung

Das Ziel eines glücklichen und guten Lebens nimmt eine zentrale Rolle in der modernen westlichen Gesellschaft ein, während die Orientierung an traditionellen Werten, etwa religiösen oder politischen, eher in den Hintergrund gerät. In diesem Kontext kann Lebenskunst Unterstützung bieten. Lebenskunst zielt auf eine bewusste Lebensführung hin, welche zu einem erfüllten und glücklichen Leben führt. In der Philosophie wird das Konstrukt als achtsamer und selbstbestimmter Weg definiert, mit dem eigenen Selbst und dem Leben umzugehen. Dazu gehört auch ein kontinuierliches, kritisch reflektierendes Bewusstsein für das eigenen Leben. Wichtig sind die eigenen Fähigkeiten, Stärken und Schwächen und das Wissen um Möglichkeiten, die das Leben bietet, um subjektives Wohlbefinden zu erlangen. Lebenskunst kann dem Forschungsfeld der Positiven Psychologie zugeordnet werden, welches sich mit den Bedingungen und Prozessen beschäftigt, die das Individuum wachsen lässt. Der Fokus liegt auf Aspekten, die Wohlbefinden fördern. Es hat sich gezeigt, dass diese als Puffer gegen Stress wirken und zu einem erfüllten Leben führen, welches auch das Ziel der Lebenskunst darstellt.

Die Positive Psychologie beschäftigt sich nicht nur mit Erwachsenen. Es hat sich herausgestellt, dass dieses Forschungsfeld auch von zentraler Bedeutung für Kinder und Jugendliche ist. Bereits Kindern im jungen Alter begegnen einer Vielzahl von Stressoren. Aus diesem Grund wird der präventive Einsatz von positiv-psychologischen Strategien befürwortet. Zudem haben Interventionen der Positiven Psychologie bereits ihre Effektivität in zahlreichen Studien unter Beweis stellen können. Besonders diejenigen, welche für Kinder und Jugendliche entwickelt worden sind, erscheinen vierversprechend. Auch im schulischen Kontext gibt es zahlreiche Studien der Positiven Psychologie, die sich mit unterschiedlichen Themen beschäftigen, wie zum Beispiel Wohlbefinden, Resilienz oder mentaler Gesundheit. Insgesamt zeigt sich großes Interesse an der Erforschung von Positiver Psychologie in Bezug auf Kinder und Jugendliche.

Dennoch gibt es bislang keine Forschung, die sich mit der Lebenskunst von Kindern und Jugendlichen beschäftigt. Es gibt zudem nur wenige Instrumente

für Kinder und Jugendliche im Bereich der Positiven Psychologie und keine zur Erforschung von Lebenskunst. Für Erwachsene hingegen gibt es eine Vielzahl von Messinstrumenten. Es ist gängig, diese für Kinder und Jugendliche zu adaptieren, indem beispielsweise nur eine Auswahl an Einzelfragen genutzt wird. Dabei bleibt es ungewiss, ob sich komplexe Konstrukte ausreichend abbilden lassen. Zudem existiert eine noch geringere Zahl an deutschsprachigen Instrumenten. Dies stellt eine Limitation für länderübergreifende Studien sowie für Studien im deutschsprachigen Raum dar, in dem Schüler und Schülerinnen häufig nicht ausreichend mit der englischen Sprache vertraut sind.

In Anbetracht der zuvor genannten Forschungslücken, verfolgt die vorliegende Doktorarbeit die Ziele (1) Interventionen zur Steigerung der Lebenskunst von Kindern und Jugendlichen zu entwickeln, (2) Trainingsprogramme in unterschiedlichen Kontexten einzusetzen, (3) die Validierung von Instrumenten zur Erfassung von positiv-psychologischen Konstrukten für Kinder und Jugendliche zu erreichen, und (4) die Übersetzung eines gängigen Instruments in die deutsche Sprache vorzunehmen.

Das Ziel von Studie 1 war die Entwicklung von Interventionen zur Steigerung der Lebenskunst von Kindern und Jugendlichen im schulischen Kontext für Schüler und Schülerinnen unterschiedlicher Altersgruppen – Grundschule und weiterführende Schule. Studie 1.1 evaluiert, ob Lebenskunst anhand einer Auswahl von Lebenskunststrategien trainiert werden kann. Hierzu wurden drei Versuchsgruppen gebildet und mit Schülern der weiterführenden Schule (16-19 Jahre alt) durchgeführt. Für Studie 1.2 wurde ein zweites Training entwickelt und mit Grundschülern und -schülerinnen (8-11 Jahre) durchgeführt. Insgesamt zeigten sich beide Trainings vielversprechend. In Studie 1.1 ergaben sich signifikante Unterschiede beim Vergleich der Studien- und der Kontrollgruppe. Zudem ergab Studie 1.2, dass höhere Ausprägungen der Lebenskunst zu einer besseren Lebensqualität führen.

Das Ziel von Studie 2 war der Transfer von Lebenskunst in den klinisch-therapeutischen Kontext. Auch hierzu wurden zwei Studien konzipiert. In Studie 2.1 sollten spezifische Muster von Lebenskunstkomponenten identifiziert werden von Jugendlichen mit Angststörung und/oder Depression.

Die Ergebnisse konnten signifikante Unterschiede zwischen der klinischen und nicht-klinischen Stichprobe in Bezug auf einige Komponenten zeigen. In Studie 2.2 wurden ein bedürfnisorientiertes so wie ein theoriebasiertes Lebenskunst-Training entwickelt, durchgeführt und evaluiert. Die Studie basierte auf einem randomisierten zwei-faktoriellem multivariaten 3x3 Versuchsdesign mit wiederholter Messung. Die Ergebnisse zeigen, dass das Training Lebenskunst und Lebenszufriedenheit steigern sowie Depressionswerte senken konnte.

Studie 3 hatte die Übersetzung eines der gängigsten Instrumente der Positiven Psychologie in die deutsche Sprache zum Ziel. Hierfür wurde die Satisfaction with Life Scale - child version (SWLS-C) mittels eines Rückübersetzungsverfahrens (Studie 3.1) genutzt und anhand einer Stichprobe von N=1099 Schülern und Schülerinnen zwischen 8 und 17 Jahren validiert (Studie 3.2). Retest-Validität, konkurrente und diskriminante Validität wurden erfasst, indem zusätzliche etablierte Messinstrumente der Positiven Psychologie herangezogen worden sind. Fit-Indizes, interne Konsistenzen und Retest-Reliabilität sowie konkurrente und diskriminante Validitäten zeigten sich hierbei zufriedenstellend.

Zusammenfassend leistet die vorliegende Doktorarbeit einen wichtigen Beitrag zur Erforschung der Lebenskunst von Kindern und Jugendlichen, vorallem in Bezug auf die Entwicklung von Interventionen in unterschiedlichen Kontexten, wie Schulen und Klinik, sowie für verschiedene Altersgruppen. Weiterhin bringt die vorliegende Arbeit Instrumente zur Erfassung der Effekte von Lebenszufriedenheit und Lebenskunst von Kindern und Jugendlichen hervor, welche zur systematischen Evaluation von Interventionen in zukünftigen Studien in deutschsprachigen Ländern eingesetzt werden können. Weiterhin wird ein länderübergreifender Vergleich der SWLS-C-Daten ermöglicht.

1. Theoretical Background

1.1 Relevance of well-being

Although positive psychology is a relatively new field, the use of positive psychological interventions (Schueller & Parks, 2014) may be considered as a complementary strategy in mental health promotion and treatment on how people can learn happiness. According to Blickhan (2015), merely concentrating on negative symptoms is not necessary for life satisfaction or well-being. Thus, treatment has to also focus on the support of well-being, mental performance and life satisfaction. Moreover, even the World Health Organization (WHO) is taking into account the relevance of well-being for health. Therefore, the WHO defines health in its constitution as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Additionally, the importance of well-being in the context of mental disorders is shown by studies demonstrating that increased well-being reduces the risk of developing mental illnesses and has a symptom-reducing effect (Keyes, Dhingra, & Simoes, 2010; Wood & Joseph, 2010; Seligman, Rashid, & Parks, 2006). Even when someone is healthy, it does not mean that this person is automatically happy. Happiness is more than just the absence of a disease or disorder (Greenspoon & Saklofske, 2001; Headey, Kelley, & Wearing, 1993; Westerhof & Keyes, 2010). This implies that well-being and a life that is perceived as happy and fulfilled are not merely for mentally healthy people. Specific components of mental health can be strengthened even if there is mental illness. Furthermore, the cultural interest of how one can lead a good

and happy life is gaining importance increasingly. This topic has been aroused since ancient times when the early philosophers were asking questions about what defines a good life and about what could be the best possible person to be. Historically, achieving happiness was considered as the most important goal in life (Compton, 2005). For example, happiness is also listed in the United States declaration of independence from 1776 as one of the three unalienable rights: “Life, liberty and the pursuit of happiness”.

The relevance of well-being for modern society is growing which is visible by the focus of research on studies comparing happiness all over the world (cf. Noelle-Neumann, 1985). For example, the world happiness report exists since 2012 and has been published yearly since then. More than 150 countries are included into the comparison.

The wish for a life that is self-determined and adapted to individual needs is playing a more centralized role. In this context, positive psychology focuses on the systematic development of what is beneficial for well-being, such as the conditions and processes that enable development for the individual (Gable & Haid, 2005). It deals with the strategies that lead to a happy life and positively influence well-being.

1.2 Definitions of well-being

After pointing out that the topic of living a good life is of great interest for modern society, in the following an overview of the most common related terms will be given and it will be worked out how applicable they are. Having a look at the definitions of happiness, quality of life, and subjective well-being

suggests conceptual overlap between these constructs. But how are they defined?

Until now, there is no agreement in defining happiness and its related constructs (Medvedev & Landhuis, 2018). Happiness can be defined as an aggregation of positive and negative feelings (Diener, 1984) or as a result of subjective evaluations of individual's life experiences or satisfaction with life (Andrew & MeKennell, 1980). For example, Holder (2012) is using the terms positive well-being and happiness synonymously. Also, terms as subjective well-being (Diener, 2006), positive affect (Fordyce, 1988), emotional well-being (Layard, 2005) and quality of life (Diener, 2000) are often used to describe happiness which suggests that the meaning of happiness may depend on the context (Medvedev & Landhuis, 2018). Subjective happiness was also defined as the evaluation of life satisfaction (Diener, 2006) while subjective well-being was described as evaluation of life quality (Andrews & McKennell, 1980). Therefore, all the terms seem to be strongly related.

A broad definition of the term quality of life is given by the WHO which says that quality of life is based on the way people perceive their position in life, in the context of culture and value system related to own goals, expectations, standards and concerns. The definition says that the quality of life is affected by one's physical and psychological health, the level of independence, social relationships and environmental aspects (WHOQOL Group, 1995).

As a synonym for happiness subjective well-being can be assumed. According to Diener (2006) it is based on different valuations regarding to life including the circumstances and events as well as physical and cognitive conditions. In summary, the concepts happiness, quality of life and subjective

well-being share common components and there is a lack of standardized operational definitions or criteria (Medvedev & Landhuis, 2018).

1.3 Discrimination between the Ways to lead a Good Life and its Results

When evaluating good and happy lives, Veenhoven (2003) points out that it is central to differentiate between the way of living a good life and the results of a good life. But why is it important? Basically, whilst some means can be learned and taught, it could be challenging to learn or teach the results of a happy life directly. The aim is to identify those components, which lead to a good life and can be taught and enhanced. Those components can be trained and may lead to happiness. In the following some psychological concepts dealing with the topic of a good life will be considered and a group of more detailed-grained and behavior-oriented strategies will be discussed related to being helpful for leading a good life.

1.3.1 Criteria for a Good Life

When looking at Veenhoven's approach of discriminating between ways of leading a good life and the results, he differentiates between the opportunities life is offering and the life results as well as between inner qualities depending on the individual and outer qualities like environmental factors (Veenhoven 2003). For Veenhoven, life-ability is classified as inner qualities as well as an opportunity life is offering. This means, leading a good life can be seen as a mental skill and is perceived as a concept like positive mental health. That means happiness can be influenced by the individual. According to

Lyubomirsky (2008) 50% of our happiness is determined by genetic and 10% by environmental factors. Our own ability to influence happiness is up to 40% based on conscious behavior – in which the ways of leading a good life can be classified.

As a result of a good life, the subjective well-being (Diener, Suh, Lucas, & Smith, 1999) can be named, which is based on the proportion of positive and negative affects. When the positive affects outweigh the negative then the subjective well-being can be described as high. Additionally, it is based on a cognitive appraisal of one's life (Holder, 2012) and on the daily satisfaction and happiness experienced. Therefore, subjective well-being is often assumed as a synonym of happiness (Diener, 2016). Nevertheless, all definitions indicate close relationships between subjective well-being, quality of life and life satisfaction (Medvedev & Landhuis, 2018).

The concept of the psychological well-being (Ryff, 1989; Ryff & Keyes, 1995) can be described as a eudemonic model of happiness. Ryff (1989) has critizied the concept of subjective well-being for missing theoretical background and therefore a lack of aspects of psychological functioning. She therefore developed the concept of the psychological well-being which expands the construct of the subjective well-being. It is more differentiated and integrates concepts of psychological functioning. It is based on six components:

1. Self-acceptance (positive attitude toward the self)
2. Positive relations (having warm, trusting and intimate interpersonal relations)
3. Autonomy (seeking of self-determination and independence)

4. Environmental mastery (ability to choose or create environments suitable to its conditions)
5. Purpose in life (believing that there is purpose and meaning in life)
6. Personal growth (continuous pursuit of developing own potential)

Having a look at the concept of psychological well-being including all the aspects of psychological functioning, there is more detailed information of how well-being could be achieved by working on each of the components.

The concepts of eudaimonia and hedonia can also be assigned to the results of leading a good life. Eudaimonic well-being (Waterman, 1990) is based on the idea to live in accordance with one's self related to own needs, talents and values. The aim is to become a fully functioning person. By realizing own potentials with the focus on activities reflecting own virtues, eudaimonic happiness can develop. Whereas eudaimonia is connected to growth, meaning, authenticity and excellence, hedonia is characterized by pleasure, comfort and the absence of negative stress (Huta & Waterman, 2014). Happiness in hedonic definition is based on maximizing positive and pleasant feelings while minimizing negative and unpleasant feelings (Keyes, 2009).

As mentioned before the concepts of happiness, subjective well-being and quality of life include common components, i.e. positive and negative affects, life satisfaction and happiness traits. There is a lack of standardized operational definitions which is necessary for reliable and valid measurements and also for the use of these terms in research literature.

1.3.2 Ways of living a Good Life

While it is not clear how well-being as a result can be improved, strategies which lead to a happy and fulfilling life can be learned. Even if happiness is also based on external conditions, i.e. genetics and environmental circumstances, one's own behavior is a central component that one can influence (Lyubomirsky, 2008). After considering concepts of a good life, in the following an overview of already existing ideas and empirical research related to the ways of leading a good life will be given.

One concept that can be assigned to the ways of how to achieve happiness is the self-determination theory by Ryan and Deci (2000). The theory is based on three basic needs: autonomy, competence and relatedness. If they are fulfilled the result can be happiness and well-being. In that context, autonomy describes the performance of self-chosen activities. A need of competence is fulfilled when one can live out own strengths and skills which lead to desired results. Relatedness is given when there is social communication which leads to support and understanding. The self-determination theory is connected to eudaimonic well-being (Ryan, Huta, & Deci, 2013). In this context the eudaimonic well-being is seen as a way to achieve happiness. But still the three mentioned aspects might not be differentiated enough to apply practical strategies for increasing happiness.

Another approach was developed by Peterson and Seligman (2004). They tried to classify the strengths and virtues which make a good life possible. They classified 24 character strengths across cultures which are considered as desirable. A questionnaire measuring those character strengths called the Values in Action Inventory of Strengths (VIA-IS) was developed. The results of their

research could show that living a life in accordance to one's strengths and virtues is related to happiness and well-being (Peterson et al., 2007) and therefore, can be seen as a way to achieve a good life.

Another concept trying to classify ways to predict happiness is the orientations to happiness (OTH) by Peterson et al. (2005). It is based on three different ways: pleasure, engagement and meaning. By combining all three ways a "full life" is reached which is strongly related to happiness. The ways given by this approach are rather general and do not give a practical hint of specific strategies to enhance happiness.

After summarizing some of the most common concepts classifying ways to leading a good life there still is a need to define concrete behavioral oriented strategies to achieve happiness which can be easily changed and trained.

Fordyce (1977, 1983) noted down 14 concrete strategies and behaviors to improve well-being and to live a good life (i.e. "Become more active", "Learn to be more positive and optimistic", "Be yourself", …). The conducted intervention studies could show that 81 % of the participants were happier after they have used the strategies. But still, the way the strategies are formulated does not allow any criteria on when they are fulfilled.

Therefore, Tkach and Lyubomirsky (2006) found out 66 strategies to increase happiness, which are summarized to eight factors (social affiliation, partying and clubbing, mental control, instrumental goal pursue, passive leisure, active leisure, religion, direct attempts to be happy). Those strategies were formulated extremely specific (i.e. smiling, studying, going to a bar, praying). So still the right balance seems not to be found yet.

Another concept developed by Warner and Vronman (2011) is named happiness inducing behaviors (HIB). Three different types of behaviors were classified: positive/proactive behavior, spiritual behavior and physical health behavior. The author name 14 behaviors improving happiness:

- relationships
- kindness
- optimism
- savoring
- goals
- new ways to cope
- gratitude
- flow
- avoiding worry
- religion
- meditation
- forgiveness
- physical exercise.

After the relevance of well-being for modern society and the most common concepts have been worked out, it is clear that formulating practical oriented strategies which are neither too general nor too detailed is challenging and that there still is a lack of strategies giving a practical hint of how to achieve happiness.

1.4 Art-of-Living

In the following the concept of the art-of-living will be introduced which is taking the challenge to find the right balance between rather general and too specific strategies to train well-being (Lang & Schmitz, 2018). At first art-of-living will be defined and the model, assessment, interventions as well as similarities and differences to other constructs will be described.

1.4.1 Definition of the Art-of-Living

The art-of-living is a construct which can be assigned to the field of positive psychology. Keeping the discrimination between the effects of living a good life and the means to achieve well-being, art-of-living can be seen as leading the way to happiness. Therefore, it focuses on strategies to improve well-being. These strategies can be learned and therefore can be trained and are neither too general nor to specific. Based on one's own needs, everyone can find suitable strategies for oneself. Although research about the art-of-living is of great interest, to date no unitary psychological definition has been established. As mentioned by Veenhoven (2003) an artist of living is someone who makes the most of it, given external conditions. But there are different views on what is a good life which makes it important to take a closer look where the expression 'art-of-living' comes from. Art-of-Living is based on philosophical thoughts by Schmid (2013). In philosophy, the construct is defined as a mindful and self-determined way of dealing with one's self and the way of life (Schmid, 2013) and it suggests a continuous critical reflection on one's own life. Consequently, it is important to recognize one's own abilities, strengths, and weaknesses and to be aware of the opportunities in life to obtain subjective well-being through mindful effort. The art-of-living is not an innate skill but can be learned. It takes joy of trying, the permission to make mistakes and to reflect about them for future learning.

The fact that life is not endless makes it necessary to live intensively and to take care of oneself. Art-of-Living provides possibilities to understand and reflect on life and to elicit choices. The art is to create one's own life in a way

that it becomes happy and fulfilling as well as to become friends with oneself. Schmid mentions that art-of-living is based on the three main components of the human existence: *body*, *soul* and *mind*.

Body. Taking care of the own body is a central component of the art-of-living construct. As mentioned by Schmid (2013), the body deals with those circumstances *soul* and *mind* cannot cope with. Basically, it is about taking care of the own physical needs. This is based on a good way of living consisting of good nutrition and sports, a good sleep for regeneration and an active use of all the five senses. A central component in this context is the concept of savoring which leads to a mindful awareness in life.

Soul. Taking care of the own soul consists of a good way of dealing with the own emotions. As a first step, it is about being aware of them and to acknowledge them. It aims to find a good balance between the extremes of emotions and the knowledge of how to use and manage them.

Mind. The mind describes a reflective way of living, a deep knowledge about oneself and an active approach to follow the own goals. It deals with actively working to find a purpose in life, which helps to cope with the challenges of life and to reach serenity.

1.4.2 Model

Each individual may have its own art-of-living. As mentioned before, there is not just one way that leads to art-of-living but there are numerous ways to improve happiness. Research already has shown that several single components (like optimism, gratitude, hope) can improve well-being. The art-

of-living is trying to combine those components in one model. Therefore, the construct is multidimensional and it integrates many aspects and as a consequence, many pathways to happiness (Schmitz, 2016). Different approaches have implemented this idea already. For example, the model by Seligman (2011) has offered the combination of positive emotions, engagement, relationships, meaning and achievement (PERMA) as criteria for a flourishing life while the art-of-living is focusing on the strategies. Regarding to this idea, the concept of the psychological capital was developed (Luthans & Youssef-Morgans, 2017) for the organizational context. It includes four positive psychological resources: hope, efficacy, resilience and optimism. But this selection might be not holistic enough, i.e. physical care is missing. For the scholastic context, the model of covitality by Furlong, You, Renshaw, Smith and O'Malley (2014) was developed. It comprises the components belief in self, emotional competence, belief in others and engaged living. The study by Pennell, Boman and Mergler (2015) has shown that there was a bigger effect of the combined covitality components on subjective well-being than the effect of each trait individually was. But still, the model only includes a small selection of components.

For that reason, art-of-living is conceptualized as a holistic integrative model which comprises central components of positive psychology as well as meta constructs like reflection and balance which are important for the internal relationships of the components (Schmitz & Schmidt, 2014). Each component is selected carefully based on theoretical considerations and all of the components are connected with each other. Art-of-Living is based on attitudes and strategies used to deal with the self and one's way of life. In the following,

art-of-living is clarified through the meanings associated with the core components (Schmitz & Schmidt, 2014). It comprises: (a) *balance*, practicing opposites and finding a way to the optimal situation; (b) *coping*, dealing well with difficult events; (c) *serenity*, not being easily disconcerted; (d) *savoring*, enjoying the positive aspects of life; (e) *shaping of living conditions*, designing one's own environment based on own needs; (f) *physical care*, paying attention to one's body; (g) *integration of different areas of life*, successful integration of the different aspects of one's life; (h) openness, being open to new experiences; (i) *optimization*, trying to achieve good results and acting effectively; (j) *positive attitude towards life*, being optimistic and grateful; (k) *reflection*, reflecting on one's behavior; (l) *self-actualization*, developing one's own abilities; (m) *self-knowledge*, awareness of one's own strengths and weaknesses; (n) *self-determined way of life*, living according to one's own convictions; (o) *self-efficacy*, conviction to cope with difficult requirements based on one's own abilities; (p) *meaning*, having life goals; and (q) *social contacts*, having good relationships (Schmitz & Schmidt, 2014). Art-of-living is based on the aforementioned components, all of which can be learned and therefore improved. An important consequence is that art-of-living can be consciously enhanced by active effort (Schmid, 2013). There are strong correlations between the components (Schmitz & Schmidt, 2014). For that reason, a transfer from one component to another is expected when training one specific component. For instance, when trained in coping, participants will be able to deal well with difficult circumstances and consequently their self-efficacy will be enhanced. Schmitz and Schmidt (2014) found that there are important links between art-of-living and other related constructs: For example, people with high art-of-

living scores to be more satisfied with life and show a higher sense of coherence. Moreover, there are positive and significant correlations with resilience and wisdom. Schmitz and Schmidt (2014) also have shown that art-of-living contributes a significant additional element to the prediction of well-being compared to existing constructs.

1.5 Interventions to improve well-being

As described above, pursuing a lifestyle based on art-of-living can be beneficial for any individual. In this context, it seems necessary to intentionally train art-of-living and empirically evaluate any increase in its scores. To date only a small number of studies have addressed art-of-living (cf. Veenhoven, 2003; Schmitz & Schmidt, 2014). However, many studies in the field of positive psychology have already examined the impact of specific components which can be related to art-of-living and subjective well-being (cf. Seligman & Steen, 2005; Mazzuchelli, Kane, & Rees, 2010). The following provides a brief overview of empirical studies of this kind, and distinguishes among the different types of interventions engaged.

The results of scientific studies confirm the effectiveness of interventions with regard to an increase in levels of subjective well-being (Sin & Lyubomirsky, 2009; Bryant & Verhoff, 2005). For example, a one-time intervention to help college students to achieve goals has proven to increase life purpose and vocational calling (Feldman & Dreher, 2012). Proctor et al. (2011) designed an intervention with strengths-based exercises to encourage students to develop their knowledge and use of their strengths. The enhanced self-

knowledge led to significantly increased life satisfaction. In particular, the positive effect of gratitude training has been demonstrated in numerous studies (e.g. Rash, Matsuba, & Prkachin, 2011). Furthermore, links to increased satisfaction with one's own life, more optimistic prospects for the near future, increased happiness and decreased physical complaints were also identified (see Emmons & McCullough, 2003; Lyubomirsky, Sheldon, & Schkade, 2005; Sheldon & Lyubomirsky, 2004). It has been shown that only a few sessions can already produce a positive effect (Lyubomirsky, 2008). There is a number of impressive interventions of positive psychology, however, the majority of these interventions are designed to only train single components (Hone, Jarden, Schofield, & Duncan, 2014). For that reason, it is of interest to develop a type of training that combines multiple components of positive psychology. Based on the construct of art-of-living, the goal is to determine which components could be combined to predict well-being effectively, and to develop a training program for different samples based on theoretical assumptions and empirical findings.

Studies that involve physical exercises were excluded from a meta-analysis conducted by Bolier et al. (2013). With respect to the holistic approach of the art-of-living, body-focused tasks could also be of significance for the improvement of well-being. There is a huge number of empirical studies on interventions which focus on physical activities. For example, Sin and Lyubomirsky (2009) could show that practicing body-focused activities, such as meditation can activate positive emotions. Researchers have also demonstrated the positive effects of interventions with body-focused tasks on cognitive skills, perception of oneself, dealing with stress and the feeling of

happiness (Mantzios & Giannou, 2014; Alexander, Rainforth, & Gelderloos, 1991). Positive effects were observed in both types of interventions: cognitive as well as body-focused. The combination of physical and cognitive components has not been adequately studied yet.

While there may be a growing number of interventions in scholastic context, the majority are not being scientifically evaluated (Green, Oades, & Robinson, 2018). Gilman, Huebner and Furlong (2009) provide many examples of empirically evaluated interventions but many of them have been developed as single component interventions. Although it was recognized that interventions which incorporate tasks fostering several different components are more effective than those that only provide for the improvement of a single component (e.g. Fordyce 1977, 1983; Seligman et al., 2009). For that reason, art-of-living training programs should comprise multiple components based on a combination of physical as well as cognitive components.

1.6 Assessment of Art-of-Living

The assessment of well-being and related constructs is central plays a central role for optimizing intervention programs and for improving the effectiveness. To assess the art-of-living, a questionnaire measuring the art-of-living by Schmitz and Schmidt (2014) exists. It was developed for adults and includes 128 items to measure the afore mentioned 17 components: *balance* (six items, e.g. “I can express my feelings, but can also keep them to myself”), *coping* (seven items, e.g. “I’m already thinking about how I can avoid time pressure”), *serenity* (six items, e.g. “I can also get upset over little things”),

savoring (eight items, e.g. “I consciously enjoy the finer things in life”), *shaping of living conditions* (five items, e.g. “I set up my home, so that I like it”), *physical care* (six items, e.g. “I pay attention to my body”), *integration of different areas of life* (five items, e.g. “A balance between personal and professional tasks is important to me”), *openness* (seven items, e.g. “I like to try out something new”), *optimization* (seven items, e.g. “I reach my goals”), *positive attitude towards life* (ten items, e.g. “I assume that everything evolves for the better”), *reflection* (nine items, e.g. “I often think about what went well and what did not”), *self-actualization* (eight items, e.g. “I want to live my options”), *self-knowledge* (11 items, e.g. “I know my own strengths and weaknesses”), *self-determined way of life* (seven items, e.g. “I am responsible for my life”), self-efficacy (seven items, e.g. “I see difficulties with equanimity, because I can trust my abilities”), *meaning* (ten items, e.g. “There is a meaning in my life”) and *social contacts* (nine items, e.g. “I know people around whom I can be who I am”). The score for each component is calculated by averaging the relevant item scores. An overall score is calculated by averaging the 17 scores of the components, higher scores of the components representing higher levels of art-of-living. The questionnaire measuring art-of-living was tested with a sample of N=1105. The evidence for validity and reliability was satisfactory. Schmitz and Schmidt (2014) reported that the questionnaire measuring art-of-living has a one second-order factor structure supported by a confirmatory factor analysis. The first eigenvalue amounted to 6.35 and explained 45 per cent of the variance. Most of the scales showed good internal consistencies of $\alpha > .70$. Some scales showed acceptable internal consistencies between $\alpha = .60$ and $\alpha = .70$. Only two components offered lower consistencies

(coping, $\alpha = .52$; shaping of living conditions, $\alpha = .53$) and should be interpreted with caution, while the aggregate art-of-living had excellent internal consistency of $\alpha = .95$. Also, the components consistently showed test–retest reliabilities of $r > .70$. Only savoring ($r = .65$, $p < .01$), selection of the environment ($r > .65$, $p < .01$), and integration of areas of life ($r = .66$, $p < .01$) showed lower correlations, while physical care showed a higher value ($r = .85$, $p < .01$). Furthermore, significant positive correlations with other well-being measures, i.e. the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), Resilience Scale (Wagnild & Young, 1993), Three-Dimensional Wisdom Scale (Ardelt, 2003), and Sense of Coherence Scale (Schumacher, Wilz, Gunzelmann & Brähler, 2000), have been documented (Schmitz & Schmidt, 2014). There also is a short version of the questionnaire (Schmitz, 2016) with 35 items. A version for children and adolescents does not exist yet.

1.7 Assessment of Well-Being

There are several instruments assessing constructs in the field of positive psychology. But the terms and definitions used in these instruments also appear inconsistent (Medvedev & Landhuis, 2018). I.e. for the Oxford Happiness Questionnaire (OHQ), a new version of the Oxford Happiness Inventory (Argyle, 2001), the terms well-being and subjective well-being were both used synonymous for happiness (Hills & Argyle, 2002). The questionnaire is based on positive and negative affects, life satisfaction and different happiness traits.

Another example named by Medvedev and Landhuis (2018) is the brief version of the measurement tool World Health Organization's Qualitiy of Life (WHOQOL Group, 1995). It consists of items tapping physical, psychological,

social and environmental aspects of quality of life (WHOQOL Group, 1998). The WHOQOL also contains items measuring positive and negative affects, life satisfaction and happiness traits but in addition includes subscales focusing on perceived physical health and aspects such as social relationships and environmental factors.

Often used instruments for measuring well-being and related constructs are the SWLS (Diener et al., 1985), the Orientations to Happiness questionnaire (OTH; Peterson, Park & Seligman, 2005), and the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). But there are also questionnaires measuring related constructs like character strengths, i.e. Values in Action Inventory of Strengths (VIA-IS; Peterson, Park, & Seligman, 2005), or the afore mentioned instruments measuring resilience (Wagnild & Young, 1993) or wisdom (Ardelt, 2003). The instruments were mainly developed in the English language and for adults. Only a few were translated into German as well (Gadermann, Schonert-Reichl, & Zumbo, 2010; Ruch, Harzer, Proyer, Park, & Peterson, 2010; Ruch, Proyer, Harzer, Park, Peterson, & Seligman, 2010).

As it has been pointed out that besides adults, children of a young age also have to deal with numerous life stressors which makes measurement of those constructs important to children and adolescents too (cf. Savage, 2011; Banos et al., 2017; Shoshani & Steinmetz, 2013). There are, however, only a few instruments in the field of positive psychology that have been developed for children and adolescents (cf. Gilman & Huebner, 2000; Huebner, 1991).

As a consequence, it is common for researchers to modify the instruments which have been developed for adults, i. e. the Personal-Wellbeing-

Index-School Children (PWI-SC; Cummins & Lau, 2005). Mainly they reduce the number of items or make a selection of the subscales of the questionnaires (Lang & Schmitz, 2017). It is uncertain whether complex constructs can be described with a reduced number of items.

There are even less instruments for children and adolescents when searching for questionnaires in other languages than English, which causes problems for the research in countries such as Germany where young children are not as familiar with the English language. Furthermore, this means that no cross-cultural studies are possible as well as being unable to measure construct validities. As a consequence, non-validated versions are used as instruments are often translated for a study.

So there still is a need for basic measurement work in the development of age appropriate instruments for children and adolescents with and without special needs. In addition, there is a need to develop instruments for children and adolescents or translate existing instruments so that they can be used in different countries.

1.8 Art-of-Living of children and adolescents

Before, the relevance of the topic well-being for modern society was summarized. In this context the most commonly used terms as well as a selection of concepts describing ways how to live a good life as well as the results of leading a good life were mentioned. The concept of the art-of-living was introduced including definition, model, interventions and assessment. In

summary, most of the afore mentioned was developed for adults. But what about the youth in the context of positive psychology?

Whereas, there is research studying the art-of-living related to adults, there is no research about the art-of-living for children and adolescents yet. But positive psychology does not just deal with adults. The relevance of positive psychology has also been pointed out for children and adolescents and so the study of positive psychology is alive in children and adolescents as well. For example, Gilman, Huebner and Furlong (2009) summarize rubrics for the study of the good life for children such as primary prevention (Coie et al., 1993), positive youth development (Larson, 2000), health promotion (Perry, 1999), resilience (Glantz & Johnson, 1999), developmental assets (Scales & Leffert, 1999), subjective well-being (Diener, Suh, Lucas, & Smith, 1999) and wellness (Cowen, 1991). Therefore, a need to study children and adolescents might also be warranted related to the concept of the art-of-living. First, let's have a look at the reasons why research of well-being would be of interest for children and youth.

The most important and perhaps obvious reason might be to see happiness as a target variable society wants so badly for children and adolescents. We simply wish for children to feel happy and content which cannot always be achieved even without disease and disorder being present (Keyes, 2009).

The second reason is that even children of a young age have to deal with numerous life stressors. Keyes (2009) presents an overview of the high prevalence of mental illness at a young age. He points out that if children are a

nation's future as it is often said, then there is too much mental illness. Referring to Lewinsohn, Hops, Roberts and Seeley (1993) and to Shaffer et al. (1996), he lists that 10% will experience major depression and 20% will suffer from anxiety or a mood disorder, or from some form of a disruptive or substance use disorder by the age of 18. For this reason, the preventive use of positive action like dealing with one's self and dealing with life stressors is advocated by proponents of positive psychology (Seligman & Csikzentmihalyi, 2000).

But what kind of stressors do children and adolescents have to face? For answering this question, different contexts appear in which children and adolescents can be studied. The main context might be the scholastic context. Children spend a lot of years and a lot of time in school and go through different developmental states. They have to face an increasing pressure to attain good marks and good academic results which is evident right from the onset of school. Differentiation of the school phases shows that graduating school is characterized by even more ever-increasing performance requirements, which can cause stress and exhaustion that can lead to psychosomatic health problems such as headaches, backaches, abdominal pain and the feeling of being tired (Milde-Busch et al., 2010). Having a look at students in secondary school, adolescents are faced with questions about their future which can cause a fear of making wrong decisions. Therefore, it is important to learn how to deal with one's self and to learn strategies to deal with life's stressors at a young age. Empirical studies show that aspects of well-being are reducing over the school years like the love the learn (Helmke, 1993) and self-worth (Hascher & Hagenauer, 2011) as well as motivational and emotional components (Baumert & Köller, 1998).

Sticking to the scholastic context, Seligman et al. (2009) were able to show that although happiness and health are what parents wish most for their children, the main focus at school remains on academic achievement like discipline and cognitive skills. So there is a discrepancy. This does not mean that it isn't important to teach academic achievement. But the challenge is to integrate both contents equally into the scholastic context. In fact, it has become necessary to start teaching both at school – especially among young children, because they need skills to ensure well-being as much as they need skills to ensure achievement. There is a synergy between learning and positive emotions (Seligman et al., 2009). A successful learning achievement is not only based on cognitive skills. Emotions also have an influence (Frederickson, 2004). With the *Broaden-and-Build-theory,* Frederickson points out that positive emotions on one hand expand human perception (broaden) and on the other hand build up resources, like competencies, problem solving skills and resilience (build). Feeling good and happy will influence concentration, cognitive skills, and promote the learning results (Abe, 2011; Pekrun, Goetz, Titz, & Perry, 2002). Additionally, the self-regulated learning model by Schmitz and Wiese (2006) considers that good results create positive emotions which will encourage the next learning action.

Another reason why it is of interest to establish positive psychology for children and adolescents is the lack of empirical research. Although, there is a substantial advocacy to establish interventions of positive psychology in the scholastic context (i.e. Seligman et al., 2009), looking at empirical research, the meta-analysis conducted by Bolier et al. (2013) could not include school-based intervention studies due to methodical criteria. So, there is a discrepancy

between the sparse empirical research and the idea of establishing school-based interventions related to positive psychology. Therefore, there is a need to conduct empirical studies in the scholastic context as well as the need for basic measurement work related to development of age appropriate instruments for children and adolescents mentioned before.

As a consequence and based on the assumptions of the art-of-living, the idea of positive psychology and previous empirical findings, the relevance of providing assistance with the aim to enhance the personal skills of children and adolescents, for example by improving fitness, life energy and positive self-esteem, is advocated by proponents of positive psychology (Seligman et al., 2009). But still there is no research related to the art-of-living of children and adolescents. While the abilities of young children related to art-of-living are commonly neglected because they may not seem to be capable of using art-of-living strategies in the way an adult or older student could, Schmid (2013) says that young children do have this potential, but external help is needed. Children and adolescents need to explore what makes them happy and how they can live a fulfilling life to be prepared for all the challenges that they will encounter and simply to become happy.

Summarizing the reasons why the study of a good life is important as well for children and adolescents, (1) happiness can be seen as a target variable, (2) there is a need of a preventive use of strategies to cope with life stressors, (3) well-being has a positive influence related to learning achievement and (4) there is a need for more empirical research about positive psychology and children and adolescents.

1.9 Purpose of the doctoral thesis

As seen, the art-of-living is a topic of central concern. Even whilst it is clear that art-of-living is of interest for everyone regardless of age, there is only research on adults available. Based on the state of current research, this doctoral thesis therefore aims in adapting the concept of the art-of-living to children and adolescents and to contribute to filling in existing research gaps concerning (1) the improvement through interventions for children and adolescents in different contexts and (2) the assessment of dimensions of well-being. For this purpose, three major studies were conducted.

Based on the definition of art-of-living by Schmid (2013) as well as on the findings by Schmitz, Lang and Linten (2018), the art-of-living is based on strategies which can be trained and therefore can be systematically enhanced for adults. For this reason, the aim of Study 1 and Study 2 was to develop and evaluate intervention programs for children and adolescents to improve the art-of-living as well as related constructs in the field of positive psychology. In order to test differences related to the age of the children and adolescents and to prove if there are differences related to the context, three different training programs were developed. For Study 1 students from primary school and students from higher grades were trained. In Study 2 an art-of-living training was developed for the therapeutic clinical context. Furthermore, it was evaluated if there are differences between a clinical and a nonclinical sample. Several training conditions were examined in both studies in order to further investigate the beneficial effects of the intervention. Based on the afore

mentioned fact, that there is a need to develop age appropriate instruments for children and adolescents with and without special needs related to well-being, and based on the results of Study 1 and Study 2, Study 3 was focused on basic measurement work. Therefore, the Satisfaction with Life-Scale child version by (Diener, Emmons, Larsen, & Griffin, 1985) one of the most common questionnaires in the field of positive psychology, was translated into German and validated. The aim was to facilitate future research related to studies for children and adolescents in Germany, to be able to evaluate intervention studies and to realize cross-cultural analyses.

Summarized, the three studies conducted within the framework of the doctoral thesis pursued the following overarching objectives:

Study 1: Developing and evaluating intervention programs in the scholastic context (a) for children from primary school and (b) for adolescents from higher grades with the aim to (c) improve art-of-living and well-being.

Study 2: (d) Analyzing differences between a clinical and a nonclinical sample and (e) improve the art-of-living for children and adolescents with depression and/or anxiety.

Study 3: (f) Translation of the SWLS-C (Gadermann, Schonert-Reichl, & Zumbo, 2010) into German; (g) analyzing the factorial structure of the questionnaire and (h) calculating concurrent and discriminant validities.

2. Thesis overview

2.1 Study 1: Art-of-Living Training: Developing an Intervention for Students to Increase Art-of-Living [1]

2.1.1 Purpose

Based on the afore mentioned lack of studying art-of-living of children and adolescents, the aim of Study 1 was to create and evaluate intervention programs in the scholastic context for improving art-of-living and well-being. Therefore, two studies were conducted which determine whether interventions designed to foster art-of-living are effective at achieving the goal of improving measures of some of the components of the construct, as well as the overall art-of-living score

Study 1.1 addressed the development of an art-of-living training and tested the effectiveness of this intervention in increasing art-of-living, as compared with a control condition. The study focuses on students in secondary school as a target group who are in preparation for their graduation. However, an increased pressure to achieve good academic results may occur as early as in primary school. In Germany grading is introduced when students are in third grades. Their achievement is highly observed by teachers and based on their marks and their academic abilities the children are separated and attend one of different types of secondary school. This process can be felt as an awkward position (Krause, Wiesmann, & Hannich, 2004). Children are growing up in a world of numerous challenges. Thus, they have to become acquainted with their

[1] Lang, J. & Schmitz, B. (2016). Art-of-Living Training: Developing an intervention for students to increase art-of-living. *Applied Psychology: Health and Well-Being, 8* (3), 279–300.

own abilities and learn how to make decisions in a conscious way. For that reason, Study 1.2 focuses on students from primary school as a target group. Another art-of-living training was developed to test the effects of art-of-living interventions for different student samples.

Given the many potential benefits of art-of-living, the aim of this study was to develop an intervention in order to increase the art-of-living. Based on the situations facing students described above, the training was designed for a scholastic context. The training to improve the art-of-living contains two different training conditions: one solely cognitive, and one with cognitive combined with body-focused tasks. A stronger effect in the combined condition compared to the condition which only addresses cognitive components was hypothesized (cf. Fordyce, 1983). In summary, the art-of-living training should, on the one hand, draw students' attention to their own strengths and, on the other hand, provide them with strategies to deal with an important stage of life and thereby afford long-term prevention in relation to possible excessive demands and diseases. As mentioned before, art-of-living is able to contribute a significant additional element to the prediction of well-being compared to existing constructs (Schmitz & Schmidt, 2014). If the training is successful in increasing art-of-living, it could have the potential to increase subjective well-being and decrease depression levels, given the interrelation between art-of-living and those constructs.

2.1.2 Study 1.1

Study 1.1 differentiated the exercises which were used in the intervention, and tested them with three different conditions to determine whether the exercises used to enhance levels of the selected components (*coping, self-knowledge, positive attitude towards life, savoring and physical care*) were effective at increasing art-of-living. A 2 x 3 design was used to compare the experimental conditions and the control condition. Both cognitive and body-focused training were used. The cognitive training included exercises for c*oping, self-knowledge* and *positive attitude towards life*, and the training which combined body-focused and cognitive exercises addressed c*oping, self-knowledge, savoring* and *physical care*. The five components were selected based on theoretical considerations regarding the situation students are faced with as described above. It was assumed that the selected components are the most important ones for students from higher grades. For example, the integration of tasks supporting *self-knowledge* into the art-of living training should be important for decisions regarding vocational orientation. In addition, students should be encouraged to reflect on their own behavior, particularly with regard to their own skills and abilities (cf. Proctor et al., 2011). As a result, they should be advised to achieve goals by utilizing their own strengths and even to deal well with difficult events like graduation time (*coping*). Also, the integration of tasks supporting gratitude and an optimistic attitude was assumed to be important (cf. Howells, 2007; Lyubomirsky, 2008). In the construct of art-of-living this component is defined as *positive attitude towards life*. Furthermore, it was expected that conducting a meditation within the art-of-living training to pay attention to one's body (*physical care*) would be beneficial

(cf. Sin & Lyubomirsky, 2009). It can be integrated as a component to balance daily school life, as well as a component of *savoring*, which is defined in the construct of the art-of-living through the conscious perception of positive emotions (Schmitz & Schmidt, 2014).

The three conditions in Study 1.1 were as follows:

Condition 1: Control group

Condition 2: Cognitive training

Condition 3: Combination of cognitive and body-focused training

Using pre and posttest for art-of-living as a within subject variable, significant interaction effects of group and time as a result of the intervention as well as stronger effects in the combined training group were hypothesized. To test the hypotheses, two-factorial ANOVAs with repeated measures and contrasts were calculated.

2.1.2.1 Method

Participants. A German high school, which was contacted by phone, agreed to a personal meeting to discuss the training and the framework of the study. A sample of $N = 58$ students attending 12th grade, 38 girls (64 %) and 21 boys (36 %), was analyzed. The age of the participants ranged from 16 to 19 *(*$M = 17.69$, $SD = .95$). Appropriate informed consent was obtained from the head of the school as well as from either students' parents or the students themselves, if they were 18 or older. The participants were randomly assigned to one of three conditions: Condition 1 was the waiting list control group (n=22), 15 girls (65%) and 8 boys (35%). The age of the participants ranged from 16 to 19 ($M = 17.57$, $SD = 1.20$). They received a shortened training after the assessments

were concluded. In Condition 2 participants received a cognitive training (n=15), 12 girls (80%) and 3 boys (20%). The age of the participants ranged from 16 to 19 (M = 17.67, SD = .82). Participants in condition 3 received training in both cognitive and body-focused components (n=21). Eleven girls (52%) and ten boys (48%) with an average age of 17.86 (SD= .73) took part in the combined group.

Measures. The above-mentioned questionnaire measuring art-of-living by Schmitz and Schmidt (2014) was used. It includes 128 items with 6-point-Likert scale ranging from of 0 (*Disagree strongly*) to 5 (*Agree strongly*). It takes 25 minutes to administer and complete the questionnaire. The questionnaire comprises all of the 17 components of the art-of-living. The intervention program was based on tasks to train the selected components. There are strong correlations between the components (Schmitz & Schmidt, 2014). For that reason, training one component might affect another component as well. The questionnaire measuring art-of-living is capable of analyzing each component as well as the composite construct. In order to calculate the total score each component score was determined.

Procedure. A training to intentionally improve the art-of-living was developed. It was based on two sessions; the duration of each session came to one and a half hours. Thus, it was considered as a brief intervention it was also expected to be effective (Feldman & Dreher, 2012; Lyubomirsky, 2008). The training involved body-focused and cognitive aspects and was initially developed for students from secondary school. It aimed to improve students' personal skills, supported them in dealing with issues involving the self and way of life, and taught them strategies for dealing with life stressors. Based on

theoretical considerations in relation to the needs of the sample, five components of art-of-living were chosen. Therefore, the following exercises to affect the components were selected:

To improve levels of *coping*, the task *Goal-Pursuit Intervention* based on Feldman and Dreher (2012) was used. Each student considered a personal aim they wanted to fulfill within the next two years. This necessitated the choice of suitable strategies to overcome potential obstacles. Visualizing the considerations was expected to lead to a feeling of having control over one's own possibilities and also improves self-esteem. A second task for the component *coping,* known as the *ABCDE-Scheme*, was based on the method of cognitive restructuring developed by Ellis (1985). Students learned to realize that not only external events cause negative emotions, but their own subjective assessment of the situation could do so as well. The point of the task was to encourage the students to reappraise situations.

For the component *self-knowledge*, two tasks were modified for the art-of-living training: The tasks *Ups and Downs* and *Strengths as a Support* as developed by Rae and Mac Conville (2015). Students were asked to draw an individual lifeline depicting their personal ups and downs. While drawing, students automatically reflected the own strengths and weaknesses which caused their ups and downs in life. In effect, this was expected to lead to a better awareness in relation to self-reinforcing and self-debilitating situations and also to a better understanding of the self and one's own strengths. Following this task, students were asked to compose a list of their strengths. The lists were collected by the trainer and then given back to the students at the end of the art-of-living training.

Positive attitude towards life was trained with the use of exercises for gratitude based on Lyubomirsky (2008) and for self-esteem developed by Rae and MacConville (2015). First the students were asked to note five things, for which they were grateful in the previous week. It was expected that this would give the students a better awareness for pleasant moments in their life and help them to feel grateful for them. This should also encourage them to be more optimistic. To train students' self-esteem, they were asked to think about positive and negative experiences in life and visualize them. This was expected to support a better awareness for positive events and a positive attitude towards life.

For the component *savoring*, students were invited to eat a piece of chocolate or a jellybean. They were instructed to actively experience the taste and to reflect on it. The objective was to transfer improved awareness into everyday life, to explicitly take enough time to enjoy pleasant moments. Savoring fosters positive emotions and increases well-being (Seligman, 2003). For *physical care*, exercises were conducted with regard to mindful breathing and mindful relaxation as suggested by Rae and MacConville (2015), which encompass elements of mindfulness, as well as relaxation. Mindful breathing aims to place the focus on one's own body, and can be used in everyday life to reduce stress and initiate a feeling of relaxation.

The full training consisted of two 90-minute sessions. Each session was delivered by both of two trained research assistants. The training was conducted in conjunction with a training manual, which included a detailed training schedule. It was assumed that an intervention once a week would be more effective than two within the same week (cf. Lyubormirsky et al., 2005), so the

two sessions took place exactly one week apart. The first administration of the art-of-living-questionnaire at the beginning of the first training was referred to as the pretest. While training, the aforementioned exercises were used to improve students' levels of the art of living. Students in the cognitive group worked on the tasks to train *self-knowledge*, *coping* and *positive attitude towards life*, and students in the combined condition were given the tasks to train *coping, self-knowledge, savoring* and *physical care*. Following session two, participants administered the questionnaire measuring the art-of-living again, which was referred to as the posttest.

2.1.2.2 Results and Discussion

Across the entire sample, pre and posttest scores on the art-of-living significantly correlated ($r = .80$, $p < .01$). Means and standard deviations for each measure by condition are listed in table 1 below.

Table 1

Study 1: Sample Sizes, Means and Standard Deviations by Condition

	combined training					cognitive training					control group				
		pretest		posttest			pretest		posttest			pretest		posttest	
	n	M	SD	M	SD	n	M	SD	M	SD	n	M	SD	M	SD
overall art-of-living	21	4.10	.43	4.27	.42	15	4.04	.43	4.28	.35	22	4.14	.35	4.18	.34
coping	21	3.52	.67	3.84	.48	15	3.25	.71	3.86	.80	22	3.66	.51	3.69	.46
self-knowledge	21	4.47	.67	4.46	.58	15	4.36	.78	4.48	.69	22	4.47	.62	4.46	.60
positive attitude towards life	21	4.36	.66	4.63	.67	15	4.13	.55	4.50	.51	22	4.44	.58	4.44	.56
savoring	21	4.51	.58	4.68	.54	15	4.35	.86	4.68	.56	22	4.68	.54	4.59	.52
physical care	21	4.32	.99	4.41	1.00	15	4.22	.80	4.12	.98	22	4.25	.98	4.34	.99

As a first step, an ANOVA was conducted to examine differences between the three groups on the overall score of art-of-living in the pretest. Non-significant differences between the three groups resulted ($F(2, 55) = 0.29$, $p < .75$, $\eta^2 = .011$). A two-factorial ANOVA with repeated measures on the factor time was conducted to determine interaction effects of group and time of measurement on overall art-of-living. It showed a significant interaction ($F(2, 55) = 3.89$, $p = .026$, $\eta^2 = .12$). Further two-factorial ANOVAs with repeated measures were conducted for each of the components. They could show significant interaction effects of group and time as follows: *coping* ($F(2, 55) = 4.98$, $p = .01$, $\eta^2 = .15$), *positive attitude towards life* ($F(2, 55) = 10.14$, $p < .001$, $\eta^2 = .27$) and *savoring* ($F(2, 55) = 5.12$, $p = .009$, $\eta^2 = .16$).

Values based on the differences between the two points of measurement were calculated for the aforementioned components and overall art-of-living. Based on the hypothesis that training in both conditions increased the art-of-living and that the combined training group lead to a stronger effect, contrasts were calculated to compare the control group with the training groups, and the two training groups with one another. The ANOVAs examined the components more closely. The analysis indicated that there were significant differences amongst the control group and both of the training groups taken together. The results are listed in table 2:

Table 2

Results of the ANOVAs for the Selected Components by Conditions

	control group vs. both training groups				cognitive group vs. combination group			
	F	df	sig.	η^2	F	df	sig.	η^2
savoring	9.074	1/56	.004	.139	0.793	35/1	.379	.023
coping	7.245	1/56	.009	.115	1.769	35/1	.192	.049
positive attitude towards life	18.712	1/56	.000	.250	1.211	35/1	.279	.034
overall	6.627	1/56	.013	.106	0.819	35/1	.372	.024

To evaluate whether the cognitive or the combined condition led to a higher effect, values based on the differences of the two points of measurement were calculated for each subscale and the overall art-of-living. The t-test comparing the cognitive condition with the control group revealed significant differences for overall art-of-living[2]: $t(18.66) = -2.63$, $p = .017$, $d = 0.93$. The t-test comparing the control group with the combined training group was not significant for the overall art-of-living[1] ($t(30.39) = -1.96$, $p = .06$, $d = 8.09$).

Further t-tests were conducted to compare the control group with each training group regarding the single components. By comparing the control group with the cognitive condition the analyses showed significant effects for the components *savoring*[1] ($t(17.29) = 2.92$, $p = .009$, $d = 1.04$), *coping*[1] *(*$t(17.14) = 2.76$, $p = .013$, d = 0.98), *self-knowledge* ($t(35) = 0.96$, $p = .022$, $d = 0.32$) and *positive attitude towards life (*$t(35) = 4.46$, $p < .000$, $d = 1.46$). By comparing the control group with the combined training group the analyses revealed significant effects for the components *savoring*[1] ($t(28.07) = 2.44$, $p = .021$, $d = 3.33$), *coping*[1] *(*$t(30.93) = 2.04$, $p = .050$, $d = 0.62$) and *positive attitude towards life*[1] *(*$t(37.78) = 3.37$, $p = .002$, $d = 1.03$).

The outcomes show that the total score of art-of-living can be improved as a result of the intervention considering the summarized results of the two training groups but also as a result of each of the intervention conditions. The trained components *savoring, coping* and *positive attitude towards life* were also affected, *physical care and self-knowledge* were not. Therefore, the hypothesis was supported to some extent. Perhaps the tasks selected to train *self-knowledge*

[2] Heterogeneity of variance; the corrected values are listed

and *physical care* did not fit into the context of the training well enough. It is conceivable that reflecting about a lifeline and one's strengths may require more than two training sessions. The task to train *physical care* focused on mindfulness and relaxation. Students may have difficulties truly relaxing in a class-setting or in the presence of their classmates.

Significant differences between the training variations could not be confirmed, indicating that both the cognitive training as well as the combined training were suitable in improving students' art-of-living. Therefore, the second hypothesis was not supported. In summary, a short two-session training could increase students' art-of-living values. This training was developed for a class context for students from secondary school. Due to the accumulated experiences and results of this intervention study, it would be of interest to test the art-of-living training with different samples.

2.1.3 Study 1.2

The results of Study 1.1 suggest that art-of-living can be increased by interventions based on cognitive components or a combination of cognitive and body-focused components. The developed training should also be tested with different samples. As mentioned before, there are doubts if young children have the same abilities in using art-of-living strategies compared to adults. Schmid (2013) points out that they do have this potential, but need external support for perceiving the issues at hand. In the scholastic context, teaching art-of-living strategies seems to be present a good opportunity to facilitate this.

In Study 1.2, an art-of-living training was developed for children in primary school, thus the questionnaire measuring art-of-living was appropriately modified. A 2x2 design was used to analyze the effects of the training. The intervention focused on three components: *positive attitude towards life*, *savoring* and *serenity*. With this in mind, simple exercises were developed to convey strategies to children which make it easier to succeed both - at school and in daily life.

The components were selected based on theoretical considerations. It was assumed, that the three selected components are most important for children this age. Seligman et al. (2009) could show that there are significant correlations between positive emotions and learning. An art-of-living training aims at positive emotions which correlate positively with the achievement regarding to thinking and attention (cf. Abe, 2011) and also with self-regulation and motivational aspects like interest and effort (cf. Pekrun et al., 2002). For that reason, a *positive attitude towards life* is important for young children. Training *serenity* can improve involvement in class (Biermann, 1978). Thirdly, training the component *physical care* and therefore dealing with the own body for example by conducting a progressive muscle relaxation can support cognitive abilities (Salbert, 2006). It is important to train all of the described components in a very young age so that the abilities can be more and more improved and can be applied through school time.

In addition to art-of-living, students' quality of life was also examined as a dependent variable. Again, significant interaction effects of group and time were hypothesized to result from the intervention. To test the hypotheses, a

repeated-measures multivariate analysis of variance (MANOVA) with the factors group and time was conducted.

2.1.3.1 Method

Participants. First a letter of intent was mailed to a German primary school which then agreed to a personal meeting. In advance, the school received information about the training as well as organizational aspects. Appropriate informed parental consent was obtained which comprised an explanation of the procedure of the training, the aim of the study as well as assuring that all data would remain anonymous. Moreover, a contact address was noted should further questions arise. From the original sample of 113 students attending grades three and four at a German primary school some subjects were removed due to failure to participate in one of the two training sessions, so the sample was reduced to N=88, 40 girls (45 %) and 48 boys (55 %). The age of the participants ranged from 8 to 11, with an average age of 9 (SD = 0.66). Students were randomly assigned to an intervention group (n=55) and to a waiting list control group (n=33). In the intervention group 26 children were in the third grade and 29 in the fourth grade. In the control group 15 children were third graders and 18 children were fourth graders.

Measures. As in study 1.1, students were administered the art-of-living questionnaire at the beginning of the first training session and at the end of the second session. The questionnaire was adapted for younger children, with regard to the number of items in accordance with established questionnaires (cf. Ravens-Sieberer & Bullinger, 1998), the rating scale and the formulations of the items. Three components of the questionnaire were selected based on theoretical

considerations and some items were removed to reduce the size of the questionnaire: *savoring* (eight items, e.g. "*I enjoy nice things*"), *positive attitude towards life* (seven items, e.g. "*My life is great*") and *serenity* (six items, e.g. "*I often feel rushed*"). Items were adapted to the cognitive and verbal skills of primary school pupils. The 6-point-Likert scale was modified to a 4-point scale and visualized with emoticons. A confirmatory factor analysis detected three factors which could explain 53% of variance. The statistical evaluation of the model showed χ^2 = 182.524 with *df* = 147. The root mean square error of approximation (RMSEA) was .05 and the comparative fit index (CFI) was .95 and the Tucker Lewis Index (TLI) was .94. The internal consistencies were α=.90 and α=.80 for pre- and posttest measurements, respectively on the total score of art-of-living. All three components showed good and acceptable internal consistencies for the two measurements: *savoring* (α = .82, α = .66), *serenity* (α = .71, α = .64) and *positive attitude towards life* (α = .87, α = .79).

An additional inventory to analyze the quality of life of children and adolescents, developed by Mattejat and Remschmidt (2006) was used (e.g. "*How well are you able to spend time by yourself?*"). The questionnaire includes seven items and it differentiates the quality of life in the categories school, family, peer contact, interests and recreational activities, as well as physical and psychological health. Finally, a total score for the quality of life can be measured. The total score showed acceptable internal consistencies for pretest (α = .78) and for posttest (α = .75).

Procedure. This study was based on a two factorial design (group x time) with repeated measures on factor time. A training to improve the aforementioned art-of-living components was used for Study 1.2. There were

two conditions, an experimental group and a waiting list control group. Each group received two sessions – one for the training (60 minutes) and another session one week later (for the second measurement) led by three trainers. The experimental group received at first the art-of-living training and the second session was used to administer the questionnaire. In the waiting list control group the procedure took place in the opposite order. The first session was used to administer the questionnaire and in the second session they received the art-of-living training. Again, it was assumed that an intervention once a week would be more effective than two interventions within the same week (cf. Lyubormirsky et al., 2005). At the beginning of the training session, the trainers conducted a baseline-measurement. The session was designed using the theme of treasure hunting. A story about a treasure hunter was read aloud and served the students as a schedule for the training. The students were administered four tasks in conjunction with the treasure hunt. Prior to each exercise they received a small object to symbolize the beginning of the task. The aim of the first task was to improve *positive attitude towards life*. The selected exercise comprised both the present and future aspects of the component. This task was based on the motivational reflection as developed by Rae and MacConville (2015). Along with the protagonist of the treasure story, they were to reward themselves with braveness. They received a mirror and gave themselves positive self-instruction. They were told that they were now brave enough, and so they put the mirror in their bags and the first task was finished. The second exercise aimed at training *savoring*. In the treasure story, the only thing edible on the island was a pearl made of chocolate. After every student had eaten their chocolate ball, they discussed their sense of taste in order to raise awareness of it. In order to train

serenity, a progressive muscle relaxation (PMR) exercise based on the work of Feldman, Greeson and Senville (2010) was conducted. Students were asked to breathe mindfully and then to notice the sensations of tension in certain parts of their body. In the fourth task everyone was encouraged to think about gratefulness so as to support a *positive attitude towards life* once again. In fact, this exercise also should affect the past aspect of the component. It is based on Lyubomirsky (2008). Written thoughts were put in their pockets when they finished the task. At the end of session one a weekly planner, like a simplified learning diary, was handed out to facilitate the transfer of the exercises. Children were informed that they could fill out the diary for themselves on the daily basis. In it they could note whether they practiced the exercises they were taught in the training.

2.1.3.2 Results and Discussion

Across the entire sample, pre and posttest scores for art-of-living and quality of life were correlated (r = .74 for pretest, r = .62 for posttest, $p < .001$). A repeated-measures MANOVA with the factors group and time was conducted. It showed a significant interaction effect of group x time ($F(4,169) = 11.67$, $p = .001$, $\eta^2 = .064$). ANOVAs with repeated measures were conducted to determine interaction effects in relation to overall art-of-living as well as for the components. For the overall score, analyses showed a significant influence due to the intervention ($F(1,86) = 26.03$, $p < .001$, $\eta^2 = .71$). Highly significant effects could also be confirmed for the trained components: *savoring* ($F(1, 86) = 17.30$, $p < .001$, $\eta^2 = 0.17$), *positive attitude towards life* ($F(1, 86) = 25.05$, $p < .001$, $\eta^2 = 0.23$) and *serenity* ($F(1, 86) = 40.07$, $p < .001$, $\eta^2 = 0.32$).

Additionally, another ANOVA with repeated measures was conducted for the total score of quality of life. The analysis showed significant interactions between time of measurement and condition ($F(1, 86) = 9.587$, $p = .003$, $\eta^2 = 0.10$). Means and standard deviations for each measure by condition and grade in relation to the total score are listed in table 3. As can be seen, values in the training group increased between the pre- and posttest.

Table 3

Study 2: Sample Sizes, Means, and Standard Deviations by Condition

	training group					control group				
		pretest		posttest			pretest		posttest	
	n	M	SD	M	SD	N	M	SD	M	SD
overall art-of-living	55	2.94	.42	3.16	.45	33	3.49	.27	3.19	.29
savoring	55	3.23	.50	3.46	.38	33	3.67	.28	3.55	.32
positive attitude towards life	55	3.12	.61	3.39	.50	33	3.71	.26	3.46	.38
serenity	55	2.47	.45	2.62	.55	33	3.11	.59	2.54	.54
quality of life	55	4.00	.96	4.39	.78	33	4.82	.39	4.64	.60

In summary, the outcomes show that the overall art-of-living, as well as the components, improved as a result of the intervention. Furthermore, not only art-of-living was affected, but students' quality of life was also enhanced significantly in the training condition. Therefore, the hypotheses were supported.

It is uncertain if the complex construct of the art-of-living can be described with only the three components selected. But based on the age and the cognitive abilities of primary school students, it seems that it is only necessary to select a few dimensions to insure a successful training. In fact, students' levels were enhanced in all of the strategies trained. The components p*ositive attitude towards life* and *savoring* increased particularly sharply. Also, there was an effect for the component *serenity*, even if it was not as significant as the other two components. This can be a result of the selected task: A PMR is a complex task and young students may find it difficult to manage in a class-setting. For future studies, it would be interesting to design a study with a follow up measure to observe whether the effects last over time, particularly when children advance to secondary school. In this case, it would be of interest to compare students who had received the training with students, who did not so as to determine who copes better with this life event. Furthermore, this study could show whether higher levels of art-of-living lead to a better quality of life. Therefore, it would make sense to think about integrating the training into the school curriculum, preferably at a young age, so as to teach art-of-living-strategies in the context of positive education (Seligman et al., 2009).

2.1.4 General Discussion

Study 1 describes the development of interventions designed to enhance levels of art-of-living. In this context, some of the components which comprise the construct were selected and exercises were chosen to train strategies intending to enhance these components. Based on the findings, there is evidence that a short two-session intervention is effective at improving art-of-living. The results show that the composite score of art-of-living, as well as the values of the selected components can be improved as a result of the training. In this context there were no significant differences between a cognitive intervention and a combined training, which addressed both cognitive and body-focused elements (Study 1.1). By studying its effects, it became clear that the art-of-living training is promising for participants of different ages and different cognitive abilities, for instance secondary school students and primary school students. The results show that art-of-living can be effectively trained among different types of samples, such as younger students (Study 1.2).

Art-of-living is a relatively new construct and not many empirical studies have yet been published. The results of Study 1 are based on interventions with small samples of students. They should be interpreted with caution. There is a need for further research on art-of-living. However, this study makes a case for training programs which include combinations of multiple components of positive psychology (cf. Hone et al., 2014). As designed, the training can be easily integrated into the scholastic context, despite the sparse empirical research this is validated by calls to implement school-based interventions of positive psychology.

The questionnaire used to measure art-of-living developed by Schmitz and Schmidt (2014) can analyze the holistic model of art-of-living. A limitation on the questionnaire is the low internal consistency of two components (*coping* and *shaping of living conditions*). In here, these two components show better internal consistencies. Nevertheless, the results in relation to those components should be interpreted with caution. Furthermore, the results could show that the questionnaire can be modified for younger children. Specific components were selected for the questionnaire. Future intervention studies with young children could possibly adapt the entire questionnaire, modifying each component to a child-friendly version. This process is currently under way.

With regard to our methodical procedure, art-of-living interventions for students in secondary school and primary school were developed. In fact, one should use caution when comparing the findings of the two training programs with one another. The results are generated by two interventions with two different samples, a process which can be successively optimized in future studies. Another option would have been to replicate Study 1 and to train a larger sample of secondary school students to validate the training before developing a second training for a different type of sample. For both studies a waiting list control groups were used which raises some limitations regarding the attribution of the results found on the intervention conditions. Consequently, the results can only be interpreted with caution and future studies should test the effectiveness of the art-of-living training at increasing art-of-living as compared to various control conditions.

Regarding methodological considerations the intervention reported in this paper was highly structured and standardized. It was based on theoretical

considerations and conducted with the use of a training manual. Initial testing of the art-of-living training with regard to the selected tasks, to the combination of the selected components and to the training duration may lead to further refinement of the intervention which, in turn, could produce strong and stable effects. For example, although only some components were assessed, the total score of art-of-living improved as well. Considering the accumulated experiences and results of the aforementioned intervention studies, it would make sense to increase the number of training sessions in future studies so as to evaluate each single task regarding its effectiveness in relation to art-of-living. As Thoen and Robitschek (2013) pointed out, differences in measured constructs over a period of time may not be meaningful if the difference does not amount to observable change, which is also an occasion to make longitudinal studies. On this occasion the participants in the study reported positive experiences with the selected tasks. An extended period between the training sessions could have provided more occasions to rehearse the trained strategies as well as more time for reflection. In that case, a larger number of measurements would provide the opportunity to record the development of improvement and conduct follow-up studies to evaluate the stability of the results over time. Suldo, Savage, and Mercer (2014) showed long-term effects, over a period of six months, with an intervention to improve life satisfaction among middle school students. It can be assumed that the art-of-living training would have similar sustainability, but future studies with follow-up measurements are needed to evaluate the stability of the results over time.

Another suggestion to refine the intervention would be to select different tasks to train for the components so as to prove which one is most effective. As

seen, a meditation for the component *physical care* did not bring about considerable improvement. One reason could be that students had problems relaxing in front of their classmates. Another reason might be that meditation aims to create a conscious perception of the body, while the items in the questionnaire measuring art-of-living primarily contend with sport activities and healthy nutrition. In this case, meditation may not be the right task to train *physical care* as it is defined by the art-of-living construct (Schmitz & Schmidt, 2014).

The participants in each study were rather homogenous groups of students from the same school. However, the construct at hand might be of interest to many people looking to benefit from an intervention which enhances their art-of-living. The levels of enthusiasm and participation brought to the training by students may differ from that of participants intentionally seeking an intervention. With this in mind, it would be interesting to also expose adults and younger children to this type of training. Implementing the training for various populations may lead to greater applicability for the art-of-living. The results of Study 1.1 and Study 1.2 are promising, and it might be beneficial to integrate these art-of-living strategies into the school curriculum, as advocated by proponents of positive education (Seligman et al., 2009). Better well-being is linked to a better learning (i.e. Frederickson & Branigan, 2005). This being the case, it is important to train students when they are young, so they can use the strategies learned here when encountering difficulties that surface in school and in conjunction with different developmental periods, such as graduation, changing schools and adolescence. In addition, it is not just up to of teachers to

cultivate art-of-living strategies, parents can foster them as well (Seligman, 2012). Preferably, positive education should be as extensive as possible.

Because art-of-living is related to other measures and constructs of well-being (Schmitz & Schmidt, 2014), and also due to the increased quality of life, it can be assumed that changes in related measures would emerge in conjunction with changes to art-of-living. It is important to compare the art-of-living training to other existing intervention programs, which are designed to enhance well-being and reduce depression (e.g. Fordyce, 1977; Thoen & Robitschek, 2013, Rash, Matsuba, & Prkachin, 2011), to determine whether the art-of-living training effects are similar to the effects of these interventions.

The training was developed in order to increase an individual's level of art-of-living in a general school setting. It is necessary to note that it should possibly appeal to a broad context. The components selected and exercises used should be based on individual needs. As Lyubomirsky, Sheldon and Schkade (2005) could verify, not every exercise helps every person to become happier. People have various and different interests, strengths and virtues. For this reason, they benefit differently from varying strategies and tasks. Future studies should take note of this, and adapt art-of-living training programs to individual needs.

In Study 1, some future applications for the art-of-living training have been proposed, which have the potential to impact various aspects of well-being. The art-of-living training, developed as a brief intervention which increases the level of art-of-living, is promising for further innovative intervention studies. There is a need for further research on art-of-living.

2.2 Study 2: Art-of-Living Training: Developing an intervention for adolescents with depression or anxiety [3]

2.2.1 Purpose

Art-of-Living interventions have not been conducted in a clinical-therapeutic context yet. Research approaches from the field of positive psychology have already provided promising, evidence-based results for the application of positive interventions in the clinical field. A well-established and promising approach that has been established for a number of years has been the use of so-called 'positive psychology interventions' (PPI), which are described by Sin and Lyubomirsky (2009, p.468) as 'treatment methods or intentional activities that aim to cultivate positive feelings, behaviors or cognitions'. For example, there are exercises on the subject of gratitude (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2008), optimism (Lyubomirsky et al., 2008), counting kindnesses (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006), personal strengths (Seligmann, Steen, Park, & Peterson, 2005), goals (MacLeod, Coates, & Hetherton, 2008), writing about positive experiences (Burton & King, 2004), and writing about possible selves (King, 2001).

However, PPI can also be the option for a wide range of malfunctions in the clinical sector (Sin & Lyubomirsky, 2009). The use of PPIs is described by Bolier et al. (2013) as a complementary strategy in the treatment of mental illness. Research on PPIs for the treatment of depression has increased

[3] Lang, J., Georg, M., Groetsch, L., & Schmitz, B. (2018). Art-of-Living Training: Developing an intervention for adolescents with depression or anxiety. *Journal of Psychology and Clinical Psychiatry, 9*(3): 0051. DOI: 10.15406/jpcpy:2019.09.00311

significantly in recent years. The results of the analyses of Sin and Lyubomirsky (2009) and Bolier et al. (2013) could show that PPIs are effective to increase subjective and psychological well-being and reduce depressive symptoms (Bolier et al., 2013). But the effects of PPI in the clinical context is not limited to depressive disorders. Fava et al. (2005) showed also positive results for the use of PPI in the area of anxiety disorders. PPI can have a strengthening of inherent components of mental health (such as well-being or life satisfaction).

Research in the field of art-of-living could show positive correlations between the construct of art-of-living and life satisfaction, resilience, coherence and well-being (Schmitz, 2016). Results of previously performed art-of-living training programs in non-clinical populations led to an increase in the values of art-of-living and well-being (cf. Lang & Schmitz, 2016). The strategies used for this are based on the PPI. Art-of-Living extends previous approaches to the application of positive interventions in the clinical field.

The importance to transfer of the art-of-living into the clinical therapeutic context goes beyond the expected positive effect on existing symptoms. People who get treatment because of a mental illness get the opportunity to learn art-of-living strategies within a training. In addition to their respective psychotherapeutic treatment, they will learn to engage in the design of their own life, their own needs, values and goals, and to view them as meaningful and fulfilling - regardless of their illness.

Study 2 describes two studies which aim at the transfer of the concept of art-of-living into the clinical-therapeutic context. Therefore, an art-of-living training was developed, implemented and evaluated for adolescents aged 12-18

years who are suffering from anxiety disorder and / or a depressive disorder. Study 2.1 aimed at the identification of those art-of-living components that show differences in their values for adolescents with the afore mentioned mental disorders. In Study 2.2 an art-of-living training (needs-oriented and predefined) was developed, implemented and evaluated.

2.2.2 Study 2.1

The aim of Study 2.1 was to detect those art-of-living components that show low scores for adolescents with anxiety and depression to identify a specific pattern of needs for this clinical disorder compared to a nonclinical sample.

2.2.2.1 Method

Participants. Adolescents were contacted via psychiatric clinics. Appropriate informed consent was obtained from patients, parents and clinics. A sample of n = 30 adolescents, 15 girls (50 %) and 15 boys (50 %), was analyzed and compared to a nonclinical sample. The age of the participants ranged from 12 to 18 *(*M = 15, SD = 1.5). At the time of the study 94% admitted that they get creative therapeutic treatments, like dance-, music-, art- or occupational therapy. 43% received depth psychological therapy, 29% behavioral therapy. 31% indicated that the psychotherapeutic treatment at the time of the survey has already gone through at least one other form of psychotherapy. The nonclinical sample (n = 100) is based on students from a large urban German high school in a neighbourhood with a medium socioeconomic status. 61 girls (61 %) and 39 boys (39 %) filled out the

questionnaire measuring the art-of-living. The age of the students ranged from 10 to 15 (M = 13, SD = 1.0).

Measures. A version for children and adolescence of the art-of-living questionnaire by Schmitz (2016) was developed (Lang & Schmitz, in progress). The questionnaire comprises 17 components of the art-of-living and includes 33 items measured with a 4-point-Likert scale ranging from 0 (*Disagree strongly*) to 4 (*Agree strongly*) which was visualized by emoticons. Significant positive correlations with other well-being measures, i.e. the Satisfaction with Life Scale (Diener et al., 1985), PANAS (Watson, Clark, & Tellegen, 1988), Self-Efficacy (Jerusalem & Schwarzer, 1999), Self-Efficacy-Optimism-Pessimism (Scholler, Fliege, & Klapp, 1999) and Students' Life Satisfaction (Athay, Kelley, & Dew-Reeves, 2012) have been documented (Lang & Schmitz, in progress). The components of the questionnaire are: *balance* (e.g. *"I can express my feelings, but also can keep them to myself"*), *coping* (e.g. *"I can cope with problems"*), *serenity* (e.g. *"I stay calm even if something is bothering me"*), *savoring* (e.g. *"I explore beautiful things and know how to enjoy them"*), *shaping of living conditions* (e.g. *"I set up my room, so that I like it"*), *physical care* (e.g. *"I pay attention to my body"*), *integration of different areas of life* (e.g. *"A balance between personal and professional tasks is important to me"*), o*penness* (e.g. *"I like to try out something new"*), *optimization* (e.g. *"I reach my goals"*), *positive attitude towards life* (e.g. *"I assume that everything evolves for the better"*), *reflection* (e.g. *"I often think about what went well and what did not"*), *self-actualization* (e.g. *"I want to live my options"*), *self-knowledge* (e.g. *"I know what I am good at"*), *self-determined way of life* (e.g. *"I pursue my own goals"*), *self-efficacy* (e.g. *"I am convinced I can solve problems"*), *meaning*

*(*e.g. *"There is a meaning in my life"*) and *social contacts* (e.g. *"I enjoy spending time with my friends"*). An overall score is calculated by averaging the 17 scores of the components. Higher scores of the components representing higher levels of art-of-living. The internal consistency was .837.

Procedure. The participants were invited to fill out the questionnaire. A researcher was there to instruct them and to support them in the case of difficulties. It took about 30 minutes to fill out the questionnaire.

2.2.2.2 Results

Means and standard deviations for each art-of-living subscale are listed in ascending order in table 4 and in table 5. The five subscales with the lowest scores for the clinical sample are *savoring*, *coping*, *self-efficacy*, *meaning* and *self-knowledge*.

Table 4

Means and standard deviations for the clinical sample

subscales (n=30)	M (SD)
savoring	2.43 (.66)
coping	2.43 (.73)
self-efficacy	2,59 (.86)
meaning	2.73 (.86)
self-knowledge	2.73 (.78)
shaping of living conditions	2.75 (.61)
serenity	2.77 (.50)
reflection	2.77 (.63)
self-determined way of life	2.79 (.62)
balance	2.82 (.58)
physical care	2.89 (.61)
integration of different areas of life	2.94 (.76)
self-actualization	2.95 (.74)
positive attitude towards life	2.98 (.60)
openness	3.02 (.71)
optimization	3.14 (.76)
social contacts	3.48 (.46)

Table 5

Means and standard deviations for the nonclinical sample

subscales (n=100)	M (SD)
serenity	3.41 (.94)
integration of different areas of life	3.98 (.75)
coping	4.07 (.75)
physical care	4.33 (.85)
openness	4.34 (.61)
savoring	4.35 (.68)
optimization	4.36 (.61)
self-efficacy	4.46 (.63)
self-determined way of life	4.55 (.68)
balance	4.56 (.43)
reflection	4.59 (.69)
positive attitude towards life	4.71 (.62)
shaping of living conditions	4.77 (.73)
self-knowledge	4.80 (.61)
social contacts	4.81 (.63)
self-actualization	4.91 (.58)
meaning	4.92 (.63)

T-tests were calculated to evaluate whether the five lowest components can be seen as specific needs compared to the scores of the nonclinical sample. For the scales *savoring*, *coping*, *self-efficacy*, *meaning* and *self-knowledge* the t-tests show significant results as can be seen in table 6.

Table 6

Results of the t-tests for the selected components

	clinical sample	nonclinical sample			
subscales	M (SD)	M (SD)	t-test	df	sig.
savoring	2.43 (.66)	4.35 (.68)	-13.65	128	<.001***
coping	2.43 (.73)	4.07 (.75)	-10.57	128	<.001***
self-efficacy	2,59 (.86)	4.46 (.63)	-13.04	128	<.001***
meaning	2.73 (.86)	4.92 (.63)	-15.27	128	<.001***
self-knowledge	2.73 (.78)	4.80 (.61)	-15.24	128	<.001***

*** $p < .001$

In summary, the results of Study 2.1 could show significant differences in the order of the art-of-living subscales in the comparison of a clinical and a nonclinical sample. Therefore, the subscales *savoring*, *coping*, *self-efficacy*, *meaning* and *self-knowledge* can be seen as specific pattern of needs for adolescents with depression and anxiety.

2.2.3 Study 2.2

The aim of Study 2.2 was to develop, implement and evaluate an art-of-living intervention for adolescents with anxiety or depression. The study is based on a randomized two factors multivariate 3x3 design with repeated measures. Based on the results of Study 2.1, the training consisted of two conditions, which should be compared to each other and a control group:

- need-oriented condition
- predefined condition
- waiting list control group.

2.2.3.1 Method

Participants. Psychiatric clinics were contacted and after their submission they announced the training to their patients. Participants had to be between 12 and 18 years being diagnosed anxiety, depression and/or emotional disorders. Appropriate informed consent was obtained from parents and patients. A sample of $N = 65$ adolescents was analyzed (need-oriented training: $n = 20$; predefined training: $n = 20$; control group: $n = 25$). 48 girls (73 %) and 18 boys (27 %) took part. The age of the participants ranged from 12 to 18 *(M* = 15, *SD* = 2.19).

At the time of the study 82% admitted that they get creative therapeutic treatments like dance-, music-, art- or occupational therapy. 48% received depth psychological therapy and 23% behavioral therapy. 27% indicated that the psychotherapeutic treatment at the time of the survey has already gone through at least one other form of psychotherapy. Among the participants who participated regularly in the training, amazon vouchers about € 50 were raffled.

Instruments. Again, the questionnaire measuring art-of-living for children and adolescents (Lang & Schmitz, in progress) was used. The internal consistencies were .904 (pretest), .942 (posttest) and .934 (follow-up).

Additionally, the questionnaire measuring anxiety and depression (DISYPS ANZ) by Döpfner, Görtz-Dorten and Lehmkuhl (2008) was used. It comprises the 17 criterias of ICD-10 and DSM-4 for diagnosing a seperation anxiety disorder (F93.0) and generalized anxiety disorder in childhood (F93.8) as well as symptoms of social and specified phobias. The questionnaire includes 41 items.

Also, the questionnaire measuring depression (DISYPS DES) was used which consists 29 items to measure symptoms of depression. Additionally, to the symptoms, one item measures subjective suffering and 8 items measure self-confidence and savoring.

The Satisfaction with Life Scale (SWLS) (Glaesmer, Grande, Braehler, & Roth, 2011) was also used and the 5-point-Likert Scale was visualized with the same emoticons that are used for the art-of-living-questionnaire. Life satisfaction was calculated based on the sum of the means of the five items. The internal consistencies were .888 (pretest), .929 (posttest) and .943 (follow-up).

Procedure. Participants were randomly assigned to one of the three conditions. They were trained in groups of six adolescents. Each of the four training sessions took 90 minutes the duration between the sessions was one week. For the time between the training sessions participants got exercises. The pretest took place at the beginning of session 1 and the posttest at the end of the last training session. Three weeks after the third training session participants filled out the follow-up questionnaire. The control group got a shortened training about 60 minutes after completing the follow-up questionnaire. Based on the results of Study 2.1 the need-oriented training included exercises to train savoring, coping, self-efficacy, meaning and *self-knowledge*. Based on theoretical suggestions, the predefined training consisted of exercises to train a *positive attitude towards life*, *serenity*, *openness*, *self-efficacy* and *self-knowledge*.

2.2.3.2 Results

An ANOVA was conducted to examine differences between the three groups on the art-of-living subscales and on the overall score in the pretest. Only for the subscale *optimization* significant differences could be found $F(2,62) = 3.47$, $p = .04$, $\eta^2 = .52$. That means the group were comparable from the beginning. Means and standard deviations for each measure by condition are listed in table 7.

To determine interaction effects of group and time two-factorial ANOVAs with repeated measures on the factor time (pre, post) were conducted for the overall art-of-living as well as for the single components. It could show significant interactions for the satisfaction with life and the overall art-of-living as well as for the subscales *meaning*, *self-knowledge*, *savoring*, *openness, integration of different areas of life* and *self-efficacy.* The results are listed in table 8.

Table 7

Means and standard deviations for each measure by condition

	needs-oriented								predefined							control group			
		Pre		post		follow-up			pre		post		follow-up			pre		post	
subscales	N	M	SD	M	SD	M	SD	n	M	SD	M	SD	M	SD	n	M	SD	M	SD
meaning	20	2.65	1.05	2.88	1.15	2.92	1.22	20	2.33	.83	2.73	.88	2.79	.92	25	2.56	.92	2.36	.90
serenity	20	2.74	.44	2.73	.64	2.58	.63	20	2.80	.57	2.77	.52	2.75	.45	25	2.86	.40	2.80	.48
social contacts	20	3.40	.58	3.40	.77	3.46	.72	20	3.45	.63	3.40	.55	3.42	.60	25	3.34	.73	3.36	.60
self-knowledge	20	2.50	.87	3.05	.86	3.04	.86	20	2.42	.63	2.80	.62	2.46	.58	25	2.64	.86	2.58	.84
reflection	20	3.02	.77	3.20	.71	3.04	.69	20	2.58	.63	3.00	.67	2.71	.72	25	3.00	.75	2.88	.77
self-actualization	20	3.00	.74	3.10	.82	2.92	.87	20	2.62	.93	3.00	.67	3.00	.74	25	2.88	.86	2.94	.71
savoring	20	2.38	.84	2.70	.92	3.12	.68	20	2.33	.59	2.90	.87	2.71	.66	25	2.56	.88	2.50	.83
positive attitude towards life	20	2.98	.60	3.17	.77	3.17	.75	20	2.85	.56	3.05	.54	2.92	.70	25	2.96	.61	2.92	.73
openness	20	2.70	.94	2.29	1.08	3.12	.98	20	2.67	.83	3.15	.67	3.08	.63	25	2.98	.73	2.84	.70
balance	20	3.00	.67	3.08	.78	3.12	.53	20	2.75	.66	3.02	.44	3.08	.51	25	3.00	.80	3.02	.70
coping	20	2.50	.73	2.77	.64	3.04	.62	20	2.00	.69	2.62	.81	2.38	.71	25	2.52	.80	2.66	.81
integration of different areas llife	20	2.70	.71	3.00	.76	3.25	.75	20	2.48	.91	2.83	.85	2.67	.78	25	2.82	.91	2.74	.89
optimization	20	2.60	.94	2.40	.94	2.67	.65	20	3.25	.85	2.90	.79	3.08	.90	25	2.84	.85	3.04	.79
self-determined way of life	20	3.17	.63	3.17	.83	3.38	.80	20	2.77	.55	3.08	.63	3.25	.62	25	2.98	.64	2.94	.70
self-efficacy	20	2.50	.92	2.80	.89	2.75	1.01	20	2.25	.68	2.90	.79	2.71	.78	25	2.54	.89	2.46	.64
shaping of living conditions	20	3.00	.84	3.12	.89	3.21	.78	20	2.70	.73	2.90	.82	2.67	.69	25	2.96	.73	2.86	.73
physical care	20	3.40	.60	3.35	.71	3.08	.67	20	2.92	.82	3.02	.70	2.92	.82	25	3.00	.84	3.06	.91
overall art-of-living	20	2.84	.50	3.01	.62	3.06	.61	20	2.64	.29	2.95	.41	2.925	.40	25	2.85	.53	2.81	.53
satisfaction with Life	20	3.74	1.73	4.32	1.12	4.62	2.20	20	2.79	1.57	3.96	1.74	4.20	1.97	25	3.45	1.39	3.55	1.61
overall depression	20	1.14	.88	0.94	.88	0.81	.89	20	1.39	.56	1.04	.62	0.97	.57	25	1.01	.61	0.90	.63
overall anxiety	20	0.60	.73	0.60	.85	0.52	.86	20	0.61	.58	0.56	.53	0.52	.54	25	0.50	.45	0.48	.57

Table 8

Results of the ANOVAs for pre-post-comparisons

subscales	F	Df	p
meaning	6.26	2/62	< .00**
savoring	5.75	2/62	< .00**
openness	7.77	2/62	< .00***
self-efficacy	5.58	2/62	< .00**
overall art-of-living	6.75	2/62	< .00**
satisfaction with life	5.28	2/62	< .00**

*** p < .001, ** p < .01

To examine whether the effects are lasting over a time of three weeks after the training an ANOVA for the two experimental groups was conducted. The results show significant interaction effects for the satisfaction with life ($F(2,37) = 8.19$, $p < .001$, $\eta^2 = .92$) and the overall art-of-living ($F(2,37) = 4.24$, $p = .02$, $\eta^2 = .67$) as well as for the subscales *meaning* ($F(2,44) = 3.46$, $p = .04$, $\eta^2 = .60$), *self-knowledge* ($F(2,37) = 4.44$, $p = .02$, $\eta^2 = .68$), *savoring* ($F(2,37) = 8.36$, $p < .001$, $\eta^2 = .94$), *openness* ($F(2,37) = 4.47$, $p = .02$, $\eta^2 = .69$) and s*elf-determined way of life* ($F(2,37) = 3.35$, $p = .04$, $\eta^2 = .59$). Additionally, a significant reduction of depression could be found ($F(2,37) = 6.45$, $p < .001$, $\eta^2 = .82$). In all of the mentioned significant interaction effects the values increase from posttest to follow-up-test.

In summary, the results of Study 2.2 could show that the developed training conditions improved the art-of-living as well as some of the art-of-living components and the satisfaction with life. Furthermore, a reduction of the depression values could be achieved. The effects lasted or even enhanced in the follow up measure.

2.2.4 General Discussion

This study first described the evaluation of a clinical sample of adolescents with depression and anxiety in relation to identify a specific pattern of needs for art-of-living components (Study 2.1). To improve art-of-living a need-oriented as well as a predefined training was developed and compared to a waiting list control group (Study 2.2). The results show that both interventions were effective in enhancing the overall score for art-of-living and for some of the components, as well as for the satisfaction with life. Another result was that depression could be reduced by the training. It could be shown that the mentioned effects lasted even in the follow-up measure. One limitation is the comparison of the experimental groups to a waiting list control group. Future studies should include other control conditions to further test the effectiveness of the training at increasing art-of-living.

Art-of-living is a relatively new construct and there are not many studies yet (cf. Veenhoven, 2003; Schmitz, 2016). Regarding the first intervention studies by Lang and Schmitz (2016), it became clear that art-of-living strategies can be trained by students of different ages and different cognitive abilities. They advocated to test various samples. Therefore, the present study shows that art-of-living is also promising for a clinical context. Future studies still have to test different samples – even in the clinical context (i.e. different disorders and different ages). The authors also advocated to extend the training sessions and the period between the sessions and to analyze lasting effects. For this reason, Study 2 developed a training based on four sessions over one month and a follow-up measurement was conducted after three weeks. This is a first step to

further develop an art-of-living training. But regarding Suldo, Savage and Mercer (2014) who could show long-term effects, over a period of six months, future research is necessary even it can be assumed that the results are stable over time.

Future studies still have to optimize the training for further refinement. They could test different combinations of multiple components (Hone et al., 2014) to optimize the training or also develop adaptive training for individual participants. Lyubomirsky, Sheldon and Schkade (2005) admire that not every exercise is helping every person. Therefore, the strategies should be based on the individual needs. However, even a short training of four sessions resulted in the improvement of art-of-living and the reduction of depression. It is promising to implement it into clinical daily life easily without much effort. To avoid that patients will repeat a training session during their stay in the clinic, sessions should be developed in an adaptive way so that strategies and exercises for each component are prepared and every participant could choose what he wants to train in each session. In this sense, the individual exercises and strategies have to be evaluated regarding its effectiveness.

In the present study, existing interventions to improve art-of-living were further refined and future applications have been proposed. Developing art-of-living interventions for a clinical context is economic and it seems to be promising for patients' health and well-being. There is a need for further research on this topic.

2.3 Study 3: German translation of the Satisfaction with Life Scale for children and adolescents

2.3.1 Purpose

Although, life satisfaction has been shown to be an important predictor for a variety of factors in children and adolescents (cf. Huebner, 2004) research could show that some aspects of well-being are reducing over the time (i.e. Hascher & Hagenauer, 2011). Therefore, the monitoring of the development of the satisfaction with life is also an important aspect of studying the life satisfaction of children and adolescents. Another reason, why the research in this field is important, is to evaluate interventions to improve components of well-being and satisfaction with life. Several interventions to improve well-being have been shown to be effective in numerous studies (Sin & Lyubomirsky, 2009). Therefore, the important question is how can the achieved effects be measured?

A search in the field of positive psychology shows that a huge number of instruments already exist for such measurements. Most of them were developed for adults. Only a few instruments were developed for children and adolescents (cf. Gilman & Huebner, 2000; Huebner, 1991). It is commonplace in the field of children and adolescents for researchers to use instruments which have been developed for adults and modify them – for example the Personal-Wellbeing Index – School children (PWI-SC; Cummins & Lau, 2005). Many adult instruments consist of a huge number of items so that they cannot be used easily for studies with young children, and so for some studies only a selection

of items is used (see Lang & Schmitz, 2017). However, it is uncertain whether complex constructs can be described with only a selection of certain items.

Gilman and Huebner (2000) reviewed a number of scales that assess life satisfaction in adolescents (cf. Forrest et al., 2018). Life satisfaction can be described as one aspect of subjective well-being and can be seen as a reflection of responding or appraising the own life taken as a whole (Diener, 2006). The Satisfaction with Life Scale by Diener, Emmons, Larsen and Griffin (1985) is one of the most common questionnaires used in the field of positive psychology. This scale has been adapted for children and adolescents by Gadermann, Schonert-Reichl and Zumbo (2010): Satisfaction with Life Scale – child version (SWLS-C). For the child version, the wording of the item stem and also the response format was changed to make it more understandable for children. The questionnaire consists of only five items which are loaded onto an overall factor – life satisfaction. Gaderman et al. (2010) reported that the SWLS-C is a psychometrically sound instrument that demonstrates evidence of convergent and discriminant validity.

Whereas the SWLS for adults (Diener et al., 1985) has been translated into many languages, the child version has not been translated to many languages yet (cf. Alvarez et al., 2018; Castelli et al., 2017). This is a problem for cross-cultural studies and for research in countries such as Germany where young students are not as familiar with the English language. One advantage to translating the SWLS-C could be that theoretical comparisons when using the SWLS and the SWLS-C could show measurement equivalence for both versions across children and adults. Gilman, Huebner and Furlong (2009) advocated that there is a need for greater attention to basic measurement work in the

development of age appropriate, psychometrically sound measures of positive psychology constructs for children and youth with and without special needs. In addition, there is a need to develop instruments for children and adolescents or translate existing instruments so that they can be used in different countries.

The aim of study 3 is to translate the Satisfaction with Life Scale for children and adolescents (Study 3.1) and to validate it, including retest reliability and correlations with several established constructs in this context (Study 3.2). In the present study, we investigated aspects of the construct validity of the SWLS-C, such as the factor structure and internal consistency, as well as whether the SWLS-C is related to other constructs. (1) We expected the German SWLS-C to show the same factor structure as well as internal consistency as the original version. Due to the study by Gadermann et al. (2010), who used several constructs for testing convergent and discriminant validity - namely *optimism* (Song, 2003)*, self-efficacy* (Song, 2003)*, self-concept* (Marsh, 1988)*, depression* (Rains, 2003) *and empathy* (Davis, 1980) - we tried to use comparable constructs that exist as German versions. This study therefore includes questionnaires for testing convergent validity which also measure *self-efficacy* (Jerusalem and Schwarzer, 1999) and *optimism* (Scholler, Fliege, & Klapp,1999) and additional but related constructs we chose based on previous research indicating relationships: (Schmitz, 2016) *life-satisfaction* (Athay, Kelley, & Dew-Reeves, 2012)*, positive and negative affects* (Watson, Clark, & Tellegen (1988) and *art-of-living* (Lang & Schmitz, in progress). For testing discriminant validity, we included the *big five* (Rammstedt, Kemper, Klein, Beierlein, & Kovaleva, 2013), which has shown correlations to other constructs of positive psychology (cf. Schmitz, 2016). (2) We hypothesiszed the SWLS-C

to have relationships of medium or large effect size to scales assessing these variables. (3) Based on previous findings (Gilman & Huebner, 2000; Gadermann et al., 2010) no significant differences in regard to group differences across males and females, as well as across the school type, were hypothesized.

2.3.2 Study 3.1

Participants. Nine hundred and sixty-three students from a large urban German high school in a neighbourhood with a medium socioeconomic status filled out the questionnaire. Three hundred and twenty-two participants were excluded because of missing values on at least one of the five SWLS items or because they were older than 18 (4 participants). Therefore, a sample of N=641 students, 333 girls (52%) and 304 boys (48%), was analysed (4 missing values related to gender). The age of the participants ranged from 9 to 18 (M = 12.44, SD = 1.56). The participating students were in the grades 5 to 10 (M = 6.85, SD = 1.34). Because of the large amount of missing values, this group was considered more closely. The group consists of 171 girls (54%) and 148 boys (46%) – 3 missing values related to gender. The chi square test could show that there are no significant differences between both groups (χ^2 (1) = .15, p = .70). The age ranged from 10-21 (M=12.12, SD = 1.25). An ANOVA could show significant differences with a small effect: F(1, 937) = 8.96, p = .003, d_{Cohen} = .22.

Measures. The Satisfaction with Life Scale – child version (SWLS-C) by Gadermann et al. (2010) consists of five items measured on a 5-point-Likert scale. The satisfaction with life is measured by averaging the values of the five items. Internal consistency from original data was .86. Concurrent and

discriminant validity evidence is good (Gaderman et al., 2010).

Procedure. A backtranslation-proceeding (e.g., Bracken & Barona, 1991; Chang, Chau, & Holroyd, 1999; Kristjansson, Desrochers, & Zumbo, 2003) has been implemented. A member of our research team with excellent language skills translated the questionnaire into German. Afterwards it was back-translated by another researcher without knowledge of the genuine items. Afterwards, the back-translated and the genuine items were discussed and two words were corrected. For item 2, the word "excellent" was previously translated literally. But the German word is not adequate for children. For this reason, we changed it to a word that is easier to understand and at the same time conveys the same meaning. For item 3, the word "happy" was originally translated ('glücklich'), which can also be understood as implying an external locus of control. For this reason and regarding a better contextual equivalence, we changed it into being satisfied ('zufrieden').

After a first version of each item was generated and presented to five experts (native speakers and English teachers), an online survey allowed them to rate the match of the pairs of the genuine item and the translation with grades, from 1 (very good) to 6 (insufficient). When they rated 3 (satisfactory) or worse, they were asked for a reason (language, wording, understandability) and a proposal for improvement (Bracken & Barona, 1991; Hambleton, 2001; Kristjansson et al., 2003). No translated items received an unsatisfactory assessment.

At the same time, a German high school was contacted by phone and agreed to a personal meeting to discuss the procedure of the study. Appropriate informed consent was obtained from the head of the school as well as from

either students' parents or the students themselves. The informed consent included a brief description of the content of the questionnaire as well as of the purpose of the study and its potential benefits. It explained the procedure and informed that the participation is voluntary. Furthermore, it was told who can be contacted for questions including mail address as well as phone number of the responsible researcher. Those who did not sign the consent did not take part in the study. Afterwards, the teachers collected the informed consents and gave different tasks to those students who were not taking part. The other students filled out the questionnaire. Informed consent was administered by the schools.

2.3.2.2 Results

To explore the underlying structure of the SWLS-C, three criteria were considered: Kaiser's criterion to keep components with eigenvalues greater than 1, Cattel's (1966) scree test and, as a more accurate procedure to estimate the number of statistically important factors (Henson & Roberts, 2006), parallel analysis (Horn, 1965). All three procedures support a 1-component structure that explains a total of 68.21% of the variance. The appropriateness of the model tested by an exploratory factor analysis was found to be acceptable (Carmines & McIver, 1981; MacCallum, Browne, & Sugawara, 1996; Hu & Bentler, 1999; Kline, 2005): $\chi^2 = 12.76$; $\chi^2/df = 2.55$; TLI = .99; CFI = .99; RMSEA = .01. The scale shows a good internal consistency of $\alpha = .88$. The results of the item analyses are listed in table 9. The item difficulties range between .72 and .88.

Table 9

Results of the item analyses: Means, standard deviations and difficulties of the translated items

	Original items	German translation	Mean	SD	Difficulty
1	In most ways my life is close to the way I would want it to be.	In den meisten Punkten ist mein Leben so, wie ich es mir wünsche.	4.03	.96	.80
2	The things in my life are excellent.	Mein Leben ist hervorragend.	4.08	.98	.82
3	I am happy with my life.	Ich bin zufrieden mit meinem Leben.	4.38	.85	.88
4	So far, I have gotten the important things I want in life.	Ich habe bisher die wichtigen Dinge, die ich mir vom Leben wünsche, auch bekommen.	4.01	1.05	.80
5	If I could live my life over, I would have it the same way.	Wenn ich mein Leben noch einmal leben könnte, würde ich es genauso machen.	3.58	1.26	.72

Table 10

Intercorrelations between the five items of the German SWLS-C

	1	2	3	4	5
Item 1	-				
Item 2	.58**	-			
Item 3	.59**	.77**	-		
Item 4	.38**	.39**	.39**	-	
Item 5	.47**	.49**	.54**	.46**	-

** = $p < .01$

As shown in table 10, the intercorrelations of the items ranged from .38 to .77. Based on Cohen's guidelines the effect sizes are low for scores with .10, medium for .30 and large for .50 (Field, Miles, & Field, 2012), indicating that the items 1,2 and 3 are highly related to each other whereas item 4 and 5 show medium to large effect sizes. The factor loadings of each of the five items can be seen in table 11. As in the original data (Gaderman et al., 2010) the items 1, 2 and 3 show higher loadings than item 4 and 5. The factor loadings of each of

the items were all good (above 0.50) or high (above 0.70) as shown in table 3 (see Stevens, 2002).

Table 11

Factor loadings of all five items of the German SWLS-C

Item	Factor 1
Item 1	.76
Item 2	.77
Item 3	.78
Item 4	.52
Item 5	.60

2.3.3 Study 3.2

2.3.3.1 Method

Participants. For this study, two high schools and six primary schools were involved. The high schools are both large and urban and in a neighbourhood with medium socioeconomic status. Four of the primary schools are medium size and urban and in a neighbourhood with medium socioeconomic status. One school can also be described as medium and urban but is in a neighbourhood with low socioeconomic status. The sixth primary school is a small suburban school in a neighbourhood with medium socioeconomic status. For this Study, *N*=1099 students were involved; 588 girls (54%) and 505 boys (46%) were analysed (6 missing values related to gender). The age of the students ranged from 8-17 (M=11.74, SD=2.08). Nineteen percent of the participants were students from primary school, and 81% were high school

students. Table 12 depicts detailed information about the age, gender and grade of the students that were involved in the study.

Table 12

Detailed information about gender, grade and age of the participants sorted by school type

		Primary school (*n*=207) (%)	High school (*n*=892) (%)
gender			
	female	59	53
	male	41	47
grade			
	3	68	-
	4	32	-
	5	-	18
	6	-	27
	7	-	24
	8	-	18
	9	-	8
	10	-	4
	11	-	1
age			
	8	32	-
	9	50	1
	10	16	11
	11	1	21
	12	1	26
	13	-	22
	14	-	13
	15	-	4
	16	-	1
	17	-	1

The students were asked to fill out a questionnaire at two points of measurements. For the first point of measurement n=679 students (gender: 378 girls (55,7%) and 301 boys (44,3%), 3 missing values related to gender; age: 8-17, M = 11.55, SD = 2.32) and for the second point of measurement n=800 students (gender: girls (54,8%) and 360 boys (45,2%), 3 missing values related to gender; age: 8-17, M = 11.50, SD = 2.10) completed the questionnaire. The

chi square test could show that there are no significant differences between both groups (χ^2 (1) = .10, p = .75). For both points of measurements n=383 students filled out the questionnaires (gender: 227 girls (59,3%) and 156 boys (40,7%); age: 8-17, M = 10.91, SD = 2.43). No significant differences between the three groups could be found (F(2,1856) = 1.07, p = .35, $\eta^2 < .01$. An ANOVA could show significant differences between the three groups related to the age of the participants with small effect size: F(2,1861) = 11.48, p < .001, $\eta^2 = .01$.

Measures.

Art-of-Living questionnaire – child version (AoL-C*).* The AoL-C (Lang & Schmitz, in progress) measures art-of-living of children and adolescents. The research about adults shows correlations with life satisfaction and related constructs (Schmitz, 2016). For this study, it was of interest to also use the questionnaire measuring the art-of-living to detect correlations with children's and adolescent's life satisfaction. For validating the AoL-C, a sample of N=1237 high school students with an age ranged from 10 to 15 years (M=12.48, SD=.95) filled out the questionnaire. The questionnaire is based on 31 items which can be distributed into two factors: 1) *Problem-solving-orientation* includes the components *coping, self-efficacy, serenity, reflection* and *optimization.* Internal consistency for the present data are $\alpha = .85$ for the pretest and $\alpha = .83$ for the posttest. 2) *Pleasure-orientation* includes the components *self-knowledge, self-determined way of life, positive attitude towards life, savoring, physical care* and *social contacts*. Cronbach's alpha for the present data is $\alpha = .81$ for the pretest and $\alpha = .84$ for the posttest.

Big-Five-Inventory (BFI-10). The questionnaire by Rammstedt et al. (2013) is a short, reliable and valid inventory that consists of ten items. It was

validated on a sample consisting of adults. The validation study of the adaptation of the long version into German by Rammstedt and Danner (2017) was attended by participants aged from 15 to 77 (M=37, SD=13 years). There is also a child version of the questionnaire, which was tested on children between 9 and 16 years. The version for children and adolescents by Lenzner at al. (2013) includes 30 items. Therefore, we decided to use the BFI-10 (Rammstedt et al., 2013) and support the participants of this study if necessary. The questionnaire measures the five factors of personality (*openness, conscientiousness, extraversion, agreeableness* and *neuroticism*) on a five-point-Likert scale. Each dimension is measured by one positive and one inverted item. Related to validity, correlations with constructs which, for example, measure satisfaction with life, health impairment and size of social networks could be identified. As reported by Rammstedt et al. (2013) the internal consistencies of the single dimensions are rather low because of the small number of items measuring each dimension. Instead of Cronbach's alphas, the authors report a retest-reliability between r_{tt}=.58 and r_{tt}=.84 as the psychometric properties. For this study, the BFI-10 was only used for one point of measurement.

Positive and negative affect schedule (PANAS). The questionnaire by Watson et al. (1988) was validated by a sample of adults between 18 and 91 years old (M=42.9, SD=15.7). It consists of twenty adjectives describing present feelings. Half of it measures positive and the other half negative affects on a five-point-Likert scale. Cronbach's alpha for positive affects for the present data was .80 (pretest) and .89 (posttest) and for negative affects .83 and .89.

Correlations between the PANAS and questionnaires measuring depression, anxiety and stress provide validity (Watson et al., 1988).

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). The BMSLSS (Athay et al., 2012) is based on the Multidimensional Students' Life Satisfaction Scale by Huebner and Gilman (2002). It was used to measure satisfaction in different areas of life (family, friends, school, self, environment) as well as general life satisfaction. For this study a German version by Rahm and Ebersold (in prep.) was used, which was filled out by German high school students for validating the questionnaire. Each is measured by one item on a five-point-Likert scale. The BMSLSS shows correlations with constructs measuring life satisfaction, which provides convergent validity (Rahm & Ebersold, in prep.). Discriminant validity is provided by the correlation between the BMSLSS and constructs measuring self-esteem (Athay et al., 2012). Internal consistency in the study by Rahm and Ebersold (in prep.) was $\alpha = .67$. Cronbach's alpha for the first point of measurement for the present data was .66 and .85 for the second point of measurement.

Self-Efficacy. The general self-efficacy was measured by the questionnaire of Jerusalem and Schwarzer (1999). It was developed for adolescence over 12 years old and for adults. It consists of nine items measured on a four-point-Likert scale. Positive correlations between self-efficacy and optimism and satisfaction with work as well as negative correlations between optimism and anxiety, depression, burnout and stress were identified (Jerusalem & Schwarzer, 1999). Cronbach's alpha for the first point of measurement for the present data was .85 and .78 for the second point of measurement.

Self-Efficacy-Optimism-Pessimism-shortversion (SWOP-K9). The scale *optimism* was used from the SWOP-K9 by Scholler et al. (1999). It is measured by two items on a four-point-Likert scale which are easily to understand. Positive correlations between optimism and self-esteem as well as internal-external control provide validity (Scholler et al., 1999). Cronbach's alpha for the first point of measurement for the present data was .72 and .72 for the second point of measurement.

Procedure. German schools, high schools and primary schools were asked to take part in the questionnaire study. One thousand and ninety-nine students, who did not participate in Study 1, filled out the questionnaire at two points of measurement, across a duration of four weeks. Again, appropriate informed consent was obtained from the head of the school as well as from either students' parents and the students themselves. Students filled out the German version of the SWLS-C as well as the previously mentioned instruments at two points in time. The questionnaire was filled out across the class, accompanied by an instructor from our research team or by their teachers who were previously instructed.

2.3.3.2 Results

Confirmatory factor analyses and reliability. Confirmatory factor analyses were conducted for both points of measurement. For the first point of measurements, the results are: χ^2 = 15.29; χ^2/df = 3.42; TLI = .99; CFI = .99; RMSEA = .06; SRMR = .02. The scale shows a good internal consistency of α = .83. A confirmatory factor analysis for the second point of measurement

results in χ^2 = 14.14; χ^2/df =2.82; TLI = .99; CFI = .99; RMSEA = .05; SRMR = .02. The scale shows a good internal consistency of α = .88. The retest-reliability for the SWLS-C was r = .80, p < .001.

Concurrent and discriminant validity evidence for the SWLS-C. The discriminant and convergent correlations between the SWLS-C and the other constructs are provided in table 13. Missing data was deleted list wise. As predicted, the SWLS-C showed statistically significant correlations to optimism (r = .37, p < .01), self-efficacy (r = .39, p < .01), BMSLSS (r = .48, p < .01), art-of-living scale problem-solving-oriented (r = .41, p < .01), art-of-living scale pleasure oriented (r = 63, p < .01), positive affects (r = .22, p < .05), and negative affects (r = -.13, p < .05). Furthermore, there are correlations to the big five scales: conscientiousness (r = .16, p < .05) and neuroticism (r = -.20, p < .01). With the exception of the negative affects, the correlations of the concurrent measures could show higher correlations than the discriminant ones.

Table 13

Correlations between the SWLS-C and convergent and discriminant measures

	SWLS-C	OPT	SE	BMSLSS	AoL-Pl	AoL-Pr	PA	NA	EX	AG	CO	OP	NE
SWLS-C	-												
OPT	.37**	-											
SE	.39**	.38**	-										
BMLSLSS	.48**	.40**	.46**	-									
AoL-Pl	.63**	.06	.10	.13**	-								
AoL-Pr	.41**	.14	.13*	.17**	.54**	-							
PA	.22*	.19**	.28**	.20**	.09	.10	-						
NA	-.13*	-.05	.04	-.01	-.13**	.01	.09	-					
EX	.01	-.10*	.01	-.03	.19**	.13**	.05	.01	-				
AG	-.03	.09	-.06	-.02	-.11*	.08	.05	.02	-.09**	-			
CO	.16*	.04	.02	.06	.18**	.34**	.03	-.08	.05	.17**	-		
OP	.03	.05	.03	.03	-.14**	.12**	.06	-.04	.08*	-.01	-.01	-	
NE	-.20**	.04	.04	-.26	-.24**	-.23**	-.04	.07	-.21**	-.04	-.11**	-.02	-

** p < .01, * p < .05, N=1099; SWLS-C=Satisfaction with Life Scale; OPT=Optimism; SE=Self-Efficacy; BMSLSS=Brief Multidimensional Student' Life Satisfaction Scale; AoL-Pl=Art-of-Living-pleasure oriented; AoL-Pr=Art-of-Living-problem oriented; PA=Positive affects; NA=Negative affects; EX=Extraversion; AG=Agreeableness; CO=Conscientiousness; OP=Openness; NE=Neuroticism

Descriptive results. Means and standard deviations of satisfaction with life for each measure by gender and type of school class are listed in table 14. As is evident, there are only small differences related to the point of measurement and gender that did not show statistical significance. Primary school students show higher scores of the satisfaction with life than high school students.

Table 14

Means and standard deviations for the SWLS-C

	SWLS-C-T1	SWLS-C-T2
female (*n*=588)	4.09 (.79)	4.13 (.82)
male (*n*=505)	4.05 (.78)	4.08 (.84)
primary school (*n*=207)	4.24 (.74)	4.30 (.79)
high school (*n*=892)	3.96 (.79)	4.04 (.85)

An ANOVA was conducted to examine differences between students from primary school and from high school for the overall score of satisfaction with life. Significant differences between the two types of schools were found for the first point of measurement ($F(1, 1097) = 15.73$, $p < .001$, $\eta^2 = .03$) and also for the second ($F(1, 1097) = 15.20$, $p < .001$, $\eta^2 = .02$). Furthermore, we have analysed whether there are differences between the participants who have filled out the questionnaire for the first point of measurement, for the second point of measurement and for both points of measurement. Analyses could not provide statistical significant differences between the groups related to the satisfaction with life for the first point of measurement ($F(2, 1264) = .25$, $p = .78$, $\eta^2 < .001$) and for the second point of measurement ($F(2, 1563) = .16$, $p = .85$, $\eta^2 < .001$).

2.3.4 Discussion

The SWLS-C by Gadermann et al. (2010) is an important research instrument in the field of measuring well-being for children and adolescents. For this reason, it is of

interest to translate the questionnaire in such way that it is applicable in multiple countries. Especially in those countries where English as a language is less familiar, there is a need for translations of the SWLS-C. The aim of Study 3 was to translate the questionnaire into German. Therefore, a backtranslation-proceeding was implemented. A first study was conducted to explore the underlying structure of the German SWLS-C. A second study with students from primary school and students from high school was then conducted as a validation study.

1. The German SWLS-C was expected to show the same factor structure as the original version as well as comparable internal consistency. The results support the hypotheses. Confirmatory factor analyses in both studies show a unidimensional factor structure for the five items measuring satisfaction with life of children and adolescents. Internal consistency and also retest-reliability were good. Factor loadings of the five items of the German SWLS-C are lower than the loadings by Gadermann et al. (2010) but they are still satisfying. The items 1, 2 and 3 show higher loadings than items 4 and 5. This corresponds with the results in the original data.

2. The SWLS-C was expected to have relations to other scales, as expected based on previous research (Gadermann et al. 2010). Therefore, also instruments measuring *optimism* (Scholler et al., 1999) and *self-efficacy* (Jerusalem & Schwarzer, 1999) as well as additional but related constructs such as the *life satisfaction* (Rahm & Ebersold, in progress*)*, *art-of-living* (Lang & Schmitz, in progress), *positive and negative effects* (Watson et al., 1988) and *personality* (Rammstedt et al., 2013) were used. The results confirm the expected correlations. While using the BMSLSS (Rahm & Ebersold, in progress) and the child version of the questionnaire measuring the art-of-living (Lang & Schmitz, in progress) which are still under development, the results must be interpreted with caution because the questionnaires are not yet validated. The analyses show high correlations between the constructs. Those relations were expected because of the results

of previous research (Schmitz, 2016) that show high correlations of the adult versions of art-of-living (Schmitz, 2016) and the Satisfaction with Life Scale (Diener et al., 1985). The satisfaction with life can be seen as a criterion of well-being and is therefore assigned to positive psychology, which applies in this context as it is the scientific and applied approach to uncovering strengths and deals with the conditions and processes that enable the self-development of the individual (Gable & Haid, 2005). Future research should examine correlations with multiple constructs of positive psychology, for example the construct *self-concept* that was not used for the study.

3. In regard to previous findings (Gadermann et al., 2010) it was expected that the SWLS-C would perform in the same way for different groups of children and adolescents (with regard to gender and school type). Consistent with the results of previous research, no gender differences were found. But contrary to the hypotheses, differences related to the school type were found. Students from primary school showed a higher satisfaction with life than students from high school. This result is in line with the results of the studies by Hascher and Hagenauer (2011) who demonstrated that well-being and self-esteem, together with a positive school-related attitude, are decreasing in the course of schooldays. As a limitation, in this study were quite large differences regarding the sample sizes across the groups - primary school (n= 207) and high school (n=892). Therefore, the analyses for testing group differences have to be taken with caution and should be repeated in future studies with similar sample sizes of the groups.

Furthermore, there are some doubts related to the use of self-report measures – especially for young children under the age of 12 (Tomyn, Fuller-Tyszkiewicz, Cummins, & Norrish, 2016) – for a number of methodological reasons, for example comprehension and responding tendencies (Cummins & Lau, 2005). Gadermann et al. (2010) investigated the cognitive processes of children and young adolescents when responding to the SWLS-C and showed evidence that participants provided meaningful responses. While the age

of the sample for the SWLS-C ranged from 9 to 14 (M=11,7, SD=1) Study 3 included even younger children from primary school aged 8 and older students up to 17 years. While filling out the questionnaires, primary school students did not mention difficulties with understanding the items or reflecting on them. Even tough, the present study did not analyze differences related to the different school grades in primary school. They have been included in the overall sample, but no age-specific-analyses were conducted. Further research should be used to discuss whether the SWLS-C is appropriate even for the youngest children in grade 3. It is possible that grade 4 may be appropriate and maybe grade 3 is not. In this case, it could have already been helpful for the students to read out loud the questionnaire. Furthermore, in Study 1 of the present study, a rather large amount of data was excluded because of missing values. For this reason, we had a closer look at the missing data and compared those who had missing data and were excluded from the analyses with this those with complete data to prove if this particularly could be potentially associated with age. The analyses could show nearly similar means and standard deviations but also a significant difference between both groups. Nevertheless, the effect was rather small. One additional explanation for the drop out could be that the questionnaire was printed double-sided for Study 1 and several students missed the backsides. However, as described before no student mentioned difficulties with filling out the understanding of the questionnaire related to reading and understanding in the present study. For future studies, a combination of the SWLS-C and multi-method assessment would be interesting, for example including reports of parents or teachers as well as friends. Furthermore, it would be interesting to first examine if there are differences of the factorial structure related to the age, and second compare samples over a long duration, in order to analyse the development of life satisfaction during school years. For example, Guhn et al. (2018) examined measurement invariance and mean differences on the SWLS-C across gender and time. They found out that SWLS-C scores significantly

decreased over the time for girls and boys and that the decrease was more pronounced for girls.

Overall, the results of Study 3 advocate the use of the German SWLS-C to assess satisfaction with life in children and adolescents aged 8 to 17. However, further validation research is necessary. Fortunately, during the research about the SWLS-C we found out that another research team was working at the same point of time on the translation of the SWLS-C as a subscale of a larger survey. Having two different research teams working on the translation of the same questionnaire at the same point of time is an unusual situation which can be seen as a chance to improve the translations. Future research needs to bring the data of both studies together for comparing it and for analysing it more closely. Additionally, further validation research is also necessary to be able to generalise the use of the German SWLS-C to other contexts. For example, combining measures of the SWLS-C with intervention studies would also be of great interest for testing different types of training, in order to improve the well-being of children and adolescents and to also test how satisfaction with life can be trained. Although there is a substantial advocacy for establishing interventions of well-being in the scholastic context (i.e. Seligman, Ernst, Gillham, Reivich, & Linkins, 2009) the meta-analysis conducted by Bolier et al. (2013) was not able to include school based intervention studies due to methodological criteria. One explanation might be that there are only a few adequate instruments measuring the effects. Therefore there is a need to develop instruments for children and adolescents or to translate existing instruments so that they can be used in different countries.

This study was a first step in translating an important instrument that can be used to compare the SWLS-C data of different countries. However, more translations in different languages are necessary to make multiple comparisons possible; for example, a differentiation between cultures, living conditions and parental education.

3. General Discussion

3.1 Summary of the Results

The central purpose of this doctoral thesis was the adaption of the art-of-living concept to children and adolescents concerning (1) the improvement through interventions for children and adolescents in different contexts and (2) the assessment of dimensions of well-being.

Therefore, in Study 1 intervention programs improving art-of-living and well-being for the scholastic contexts (a) for children from primary school and (b) for adolescents from higher grades were developed and evaluated. The interventions were based on two sessions and different training groups were conducted, a cognitive intervention and a combined training including cognitive as well as body-focused tasks. For the training sessions a selection of components was made and tasks were developed to train strategies intending to enhance these components. The results could show that the training did in fact improve art-of-living. The overall score as well as the values of the selected components could be improved as a result of the interventions. Based on the findings, art-of-living training programs show promising results for participants of different ages and different cognitive abilities, for instance secondary school students (Study 1.1) and primary school students (Study 1.2). The results could show that art-of-living can be effectively trained among different types of samples, such as younger students.

After finding out that art-of-living can be effectively trained among different types of samples, such as students from different ages, a second purpose of the present doctoral thesis was to adapt the art-of-living to more contexts. Therefore, Study 2 focused on a clinical sample consisting of children and adolescents suffering from depression and/or

anxiety in relation to identify a specific pattern of needs for art-of-living components. At first, differences between a clinical and a nonclinical sample were analyzed (Study 2.1) and then a need-oriented as well as a predefined intervention improving the art-of-living for children and adolescents with depression and/or anxiety was developed and compared to a waiting list control group (Study 2.2). The results could show significant differences in the order of the art-of-living subscales comparing a clinical and a nonclinical sample. A specific pattern of needs for adolescents with depression and/or anxiety can be seen consisting of the subscales *savoring*, *coping*, *self-efficacy*, *meaning* and *self-knowledge*. Both interventions were effective in improving the overall art-of-living as well as some of the single components. Furthermore, the satisfaction with life could be improved and depression values could be reduced by the training. The mentioned effects persisted in the follow-up measure.

After finding out about the effects of the interventions for different samples in different contexts, it has been pointed out that measuring those effects is challenging due to the lack of instruments developed for children and adolescents, especially in German. For Study 1 and 2 adapted versions of the adult questionnaires were used for which a selection of items was made and some of the items were reformulated. Therefore, the third aim of the doctoral thesis was to pay attention to basic measurement work to facilitate future research related to studies for children and adolescents in Germany by translating one of the most commonly used research instruments in the field of measuring well-being for children and adolescents: So the SWLS-C by Gadermann, Schonert-Reichl and Zumbo (2010) was translated into German, the factorial structure of the questionnaire was analyzed and concurrent and discriminant validities were calculated. A backtranslation-proceeding was implemented for the German version of the questionnaire. In Study 3.1 the underlying structure of the German SWLS-C was explored by N = 641. Study 3.2 was conducted to validate the questionnaire with a sample of N =

1099 students from primary school and students from high school. Confirmatory factor analyses could show the same factor structure of the German version as the original version as well as internal consistency. For both studies, the results could show unidimensional factor structure for the five items measuring satisfaction with life for children and adolescents as well as good internal consistencies and retest-reliabilities. Furthermore, correlations with related constructs were found, such as *optimism* (Scholler et al., 1999) and *self-efficacy* (Jerusalem & Schwarzer, 1999) as well as additional but related constructs such as the *life satisfaction* (Rahm & Ebersold, in progress*)*, *art-of-living* (Lang & Schmitz, in progress), *positive and negative effects* (Watson et al., 1988) and *personality* (Rammstedt et al., 2013).

In summary, in the present doctoral thesis future applications for art-of-living interventions have been proposed, which have the potential to impact various aspects of well-being. The developed training programs are promising for further innovative intervention studies. By translating the SWLS-C as an important instrument in the field of positive psychology, attention to basic measurement work was paid. However, there is a need for further research.

3.2 Limitations and Future Research Perspectives

The present doctoral thesis focuses on the art-of-living, a research topic that is quite new and not many empirical studies have yet been published - especially not related to children and adolescents. As a consequence, the conducted studies represent initial approaches to fill several existing research gaps in this context. Even though the results provide many important insights, there are also some limitations and a considerable need for future research about the art-of-living of children and adolescents.

3.2.1 Modeling

The art-of-living describes a holistic approach which combines several central aspects of well-being. When adapting the construct to children and adolescents, it needs to be considered whether all the central components for children and adolescents are included. Perhaps there are differences compared to adults or components might be missing in the construct. For example, Howells (2012) shows the importance of gratitude in education which is missing as a component in the art-of-living model. Howells (2012) describes the effects of gratitude as a powerful strategy for both teachers as well as students. She shows its relevance related to gaining greater resilience, improved relationships and increased engagement which causes the subjects to be more present. Therefore, gratitude might be a component that is missing in the construct for adults as well as for children and adolescents. There might be more components of interest which need to be added to the construct when adapting it to children and adolescents.

As mentioned before, the art-of-living shows significant correlations to other measures and constructs of well-being (Schmitz & Schmidt, 2014). The present doctoral thesis could show (Study 1) positive correlations to quality of life (Mattejat & Remschmidt, 2006), satisfaction with life (Glaesmer, Grande, Braehler, & Roth, 2011), and negative correlations to depression and anxiety (Döpfner, Görtz-Dorten, & Lehmkuhl, 2008), as well as (Study 3) correlations to the Satisfaction with Life Scale child version by Gadermann, Schonert-Reichl and Zumbo (2010) could be shown. Therefore, it can be assumed that effects to related measures would also lead to changes in art-of-living. For this reason, it would be of interest to uncover the constructs showing correlations to the art-of-living as well as to compare the art-of-living training to other existing intervention programs, which are designed to enhance well-being and reduce depression (e.g. Fordyce, 1977; Thoen & Robitschek, 2013, Rash, Matsuba, & Prkachin,

2011). In that way future studies could determine whether the art-of-living training effects are similar to the effects of these interventions.

The results of the intervention studies are based on small samples. An alternative method instead of developing different training for different groups would have been to validate the first of the interventions which was aimed at students from higher grades with more detailed analyses, i.e. by replicating the study with a larger group of participants. This should be taken into account in future research.

3.2.2 Intervention

Study 1 and Study 2 include different intervention programs developed for different samples. These studies are a case for training programs which include combinations of multiple components of positive psychology (cf. Hone et al., 2014). Regarding methodological considerations, the interventions were highly structured and standardized by being based on theoretical considerations and the use of training manuals. Concerning those interventions developed and evaluated within this doctoral thesis, the results could show their effectiveness, and certain limitations as well as requirements for future research.

The training programs were developed as brief interventions. Therefore, a selection of trained components was made. Considering the age of the students as well as the fact that the training replaced classes, it was necessary to focus on a brief selection of components. Even though the outcomes show that art-of-living could be improved, it is uncertain whether the selection can describe the holistic construct of the art-of-living.

When looking at the contents of the interventions, the findings could show that there are differences related to the selected tasks and the level at which they effected the components. I.e. in Study 1 the progressive muscle relaxation as well as the meditation

for the component *physical care* could not lead to a considerable improvement. The setting as well as the assessment could be listed as possible reasons. It might be challenging for students to relax in the classroom next to their classmates. A meditation aims to create a conscious perception of the body, while the items of the questionnaire are focus on sport activities and healthy nutrition. The exercise might not have been suitable to train *physical care* as it is defined by the art-of-living construct. There is a need of initial testing of each task as well as the combination of the selected components in future studies. When evaluating the tasks, an additional option could be to provide several tasks for training one component in order to prove which one shows the biggest effect.

All the interventions in this doctoral thesis were developed for specific settings such as scholastic or clinical context – rather homogenous groups of students from the same school or in the same clinical environment. Improving art-of-living might be of interest for many people looking to benefit from an intervention and should be implemented to various populations such as even younger children in kindergarten or children and adolescents starting their further education. In this context, it needs to be considered in which way art-of-living strategies need to be provided to be useful for different cognitive abilities. Exposing art-of-living training to a broader context may lead to greater applicability. As known, not every task is helpful for everyone to improve happiness (Lyubomirsky, Sheldon, & Schkade, 2005) – especially in regard to a more heterogeneous group of participants. Therefore, the development of an adaptive training with exercises based on the individual needs could be of interest. Participants could choose from varying strategies and tasks based on their own interests, strengths and virtues. Considering the findings of Gräfe (2016), the right way to assign strategies needs to be found out in future studies. Her research proved that the effect of an intervention differs based on the way the training strategies are assigned. The results of her study could

show that letting participants choose which components they want to train leads to the lowest effect which contradicts the autonomy theory by Ryan and Deci (2000). While choosing the strategies based on the lowest scores of the art-of-living components and also making a selection of strategies for the participants could show higher effects in improving art-of-living.

Although Study 1 showed that even short-term interventions can improve the art-of-living, there might be a need for initial testing related to the expanding of training duration as well as increasing the number of training sessions which might lead to further refinement and strong and stable effects. In this context, an extended period between the training sessions might have provided a better training effect as well as more time for reflection. Measuring the effects in between the training sessions could be of interest for future studies to record the process of improvement. Thoen and Robitschek (2013) pointed out that differences in measured constructs over a period may only be meaningful if the difference does not amount to observable changes. Therefore, it would be of interest for future research to conduct longitudinal studies. As seen, Suldo, Savage, and Mercer (2014) conducted an intervention program to enhance life satisfaction among middle school students. They were able to show long-term effects over a period of six months. Follow-up measures would be able to evaluate the stability of the results over time for art-of-living training as well.

To test the intervention different conditions were developed. Waiting control groups were used which raises some limitations regarding the attribution of the results found in regard to the intervention conditions. The effects of the interventions need to be analyzed under various control conditions. Moreover, in Study 1 both training conditions, cognitive as well as a combined training group, could improve the art-of-living. No significant differences between the training conditions could be confirmed. In both types of interventions positive effects could be shown (i.e. Sin & Lyubomirsky, 2009).

Researchers have demonstrated positive effects of interventions with body-focused tasks, on cognitive skills, perception of oneself, dealing with stress and the feeling of happiness (Mantzios & Giannou, 2014; Alexander, Rainforth, & Gelderloos, 1991). But as of yet there is no adequate research focusing on a combination of physical and cognitive components. Regarding the holistic approach of the art-of-living, an intervention program training the art-of-living needs to combine physical as well as cognitive strategies. Future research is relevant to find the right balance in developing a combined intervention.

3.2.3 Assessment

The holistic model of art-of-living can be measured by the questionnaire measuring art-of-living by Schmitz and Schmidt (2014). A limitation of the instrument is the low internal consistency of two components (*coping* and *shaping of living conditions*). For the present studies, both components showed better internal consistencies.

As mentioned above, there is a need for basic measurement work - especially in regard to children and adolescents. Therefore, in Study 3 a German version of the SWLS-C was created. For analyzing the correlations with related constructs, the BMSLSS (Rahm & Ebersold, in progress) as well as the art-of-living questionnaire for children and adolescents (Lang & Schmitz, in progress) were used. The outcomes of Study 1 and Study 2 could show that the questionnaire measuring the art-of-living (Schmitz & Schmidt, 2014) can be modified for younger children and adolescents by selecting a smaller number of items and rewording them. But the questionnaires are still under progress and there are no validated versions as of yet. When evaluating the effects of an art-of-living training, a suitable, reliable, and valid measure is indispensable. Therefore, future studies with young children and adolescents need to adapt the entire questionnaire to a child-

friendly version. As can be seen, there is still a need for basic measurement work in the field of positive psychology for use in future research.

Especially in regard to children and adolescents, there are doubts related to the use of self-report measures (Tomyn, Fuller-Tyszkiewicz, Cummins, & Norrish, 2016), due to their cognitive skills like comprehension, or because of methodological reasons like responding tendencies (Cummins & Lau, 2005). Schmid (2013) points out that children and adolescents have this potential but might need external support. Additionally, Gadermann et al. (2010) investigated the cognitive processes of children and young adolescents between 9 to 14 when responding to the SWLS-C. They could show that participants were able to provide meaningful responses. For Study 1 and Study 3 even eight-year-old children from primary school filled out the used questionnaires. Future studies need to analyze whether there are differences related to the selected self-reported instruments and the different age categories.

When thinking of alternatives to self-reported measures, an option could be the use of multi-method assessments such as objective measurements or peer reports by parents, teachers and friends. Ruch et al. (2010) used a peer-rating form of Values in Action Inventory of Strengths (Peterson, Park, & Seligman, 2005) to test its convergence with the self-ratings. They could demonstrate good psychometric properties as well as evidence of validity.

The results of Study 1 are promising for the scholastic context. As advocated by proponents of positive education (Seligman et al., 2009), to integrate these types of brief interventions enhancing art-of-living strategies into the school curriculum might be beneficial for children of all ages. In some rare parts of Germany happiness is taught as a subject in school. The idea was based on Fritz-Schubert (2008) who implemented the topic into the school curricula and a few schools employed it. It is very challenging for

schools to spend time on topics that are not part of the curriculum given by the ministry for education. Therefore, strategies need to be implemented as short tasks. Considering the findings by Hascher and Hagenauer (2011), aspects of well-being such as self-worth as well as the attitude towards school decrease over time for school children. Teaching art-of-living can prevent this when trained at a young age. Children and adolescents can use the trained strategies when facing challenging situations that appear in school and in conjunction with different developmental periods, such as graduation, changing schools and adolescence. Furthermore, well-being is connected to better learning (i.e. Frederickson & Branigan, 2005). Having positive emotions influences concentration, cognitive skills, and will lead to improved learning results (Abe, 2011; Pekrun, Goetz, Titz, & Perry, 2002). For this reason, implementing art-of-living training in school could lead to better academic achievement as well. In addition, cultivating the use of art-of-living strategies is not only up to teachers. Parents can foster them (Seligman, 2012). Therefore, it is advocated that positive education should be as holistic as possible.

Therefore, there is a need to develop training programs which support children and adolescents over a long period of their lives. An example is the Geelong Grammar School in Australia, which implements positive education in its curricula. The school states say that the focus is on valuable life skills to support students to strengthen their relationships, build positive emotions, enhance personal resilience, promote mindfulness and encourage a healthy lifestyle which leads to an increased capacity to learn effectively.

When asking parents what they most wish for their children to learn, the answer is happiness (Seligman et al., 2009). And yet the focus at school is on academic achievement. So, there is a discrepancy and a good balance between both types needs to be found for the scholastic context. In the aforementioned curriculum given by the ministry of education, it is challenging to spend extra time on subjects that are not listed.

Therefore, there is a need to change the political view on what is relevant to teach at school and to make the necessary space to implement skills like gratitude into the scholastic context. Future research needs to focus on the development of the trained children and adolescents in relation to their level of happiness during school time, especially in regard to who is coping better in difficult periods, as well as their scholastic achievements. Comparisons within the whole country as well as international comparisons of several countries like the world happiness report or the OECD better life index need to be made.

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